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PRICE THREE SHILLINGS.

Three Centuries of Prices

OF

Wheat, Flour and Bread.

WAR PRICES AND THEIR CAUSES.

BY

JOHN KIRKLAND.

INSTRUCTOR IN BREADMAKING; EDITOR OF "MODERN BAKER, CONFECTIONER & CATERER"; AUTHOR OF "ALL ABOUT BREADMAKING"; "TECHNICAL CALCULATIONS," ETC., ETC.

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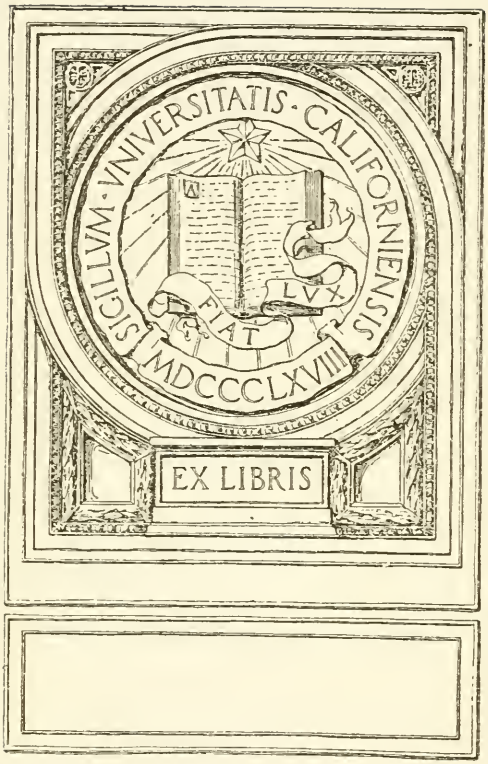
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PREFACE.

The middle of the widest and wildest war in the world's history hardly seems the time for publication of long lists of figures on prices, yet when conditions are so abnormal, it may not be without profit to study prices and other times, some of which were hardly less harassing to the people who lived through them. In 317 years of the history of Great Britain there are many such momentous periods.

This work is not issued for entertainment, but only as a handy source of reference to the many who do, or who must, make themselves familiar with relative prices.

It has again been demonstrated, that lowly as bread is esteemed in normal times, it becomes the thing of prime importance in periods of stress, and its price affects in a remarkable degree the whole social fabric. The suspicion that consumers have to pay more for bread than the prices of raw materials—wheat and flour—warrant, generate the heat and fire that produce revolutions.

This little book supplies the figures which can be read and understood by anyone. It may have therefore a popular use. To the student its value may consist in its being a collection from many sources, each difficult enough to discover, or, if known, then hard to use. The works from which information has been secured are given in a short bibliography at the end, this method being adopted in preference to that of adding cumbersome and confusing notes to the text.

The chapter on "Wheat prices during the war" has been prepared wholly by my friend Mr. Arthur Barker. He is recognised as a leading

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authority on wheat and flour prices, and is in the closest touch with Mark Lane, the Baltic, and other British and Foreign Grain markets. The figures may be accepted as authoritative.

The chapter on Bread Prices and regulations during the war is added for historical reasons. Just as everything that was attempted and done during the Napoleonic wars at the end of the eighteenth and the beginning of the nineteenth centuries, has a peculiar interest for us at the moment, so another day in the future people will read with interest of our troubles, our efforts, our failures and our successes, and the great bread problem will not be the least in interest. It is probably as well to note details accurately at the moment; the memories of individuals are short, and the memory of the public is shorter and unreliable.

I have endeavoured to compile the matter with much care, but hardly expect that it will be free from faults and inaccuracies.

J. K.

National Bakery School,
Borough Polytechnic Institute,
July 25th, 1917.

THREE CENTURIES OF BREAD PRICES.

AMONGST economists the price of bread has been generally taken as the index for estimating the value of workmen's wages and their social condition at any period. But when an effort is made to compare conditions at different periods by such an index the data for the purpose is seldom available. Tables of wheat prices there are in plenty, but even these are unsafe as guides because of the manner in which the tables are compiled, or the different character of the grain to which they refer. Flour prices are not available for any lengthened period, and if they were the causes which make wheat prices suspect would be intensified in the case of flour because of differences in quality and in kind, and differences in the factors which influence flour prices at different times or in varying circumstances. There have been from time to time bread prices published for considerable periods, but in these cases also comparison of figures are wholly misleading because the same designation does not at different times refer to the same quality of bread.

This essay is the result of an effort to collect for a range of some three hundred years all the reliable wheat, flour, and bread prices, and, without altering relative values, to reduce the figures to terms which can fairly be compared. At the same time with a view to the interpretation of the historical significance of the prices, columns are devoted in the tables containing the names of reigning monarchs at the respective periods, and such events as might be considered as influencing prices in one direction or another are given.

Everyone may be quite certain that our present very high wheat prices are due solely to the war, yet such an opinion is only right with qualifications, the sum of which makes it very nearly wrong. Thus it may be correct to say that without the war there would not have been such an increase of prices, yet if by the war we mean the efforts of our enemies to reduce supplies, that effort may be considered the least of the factors

in the problem, affecting prices only to the extent of higher insurance premiums on war risks, and that in spite of the considerable destruction by submarines. But because the war has engaged about half our shipping in work other than that of carrying food supplies, the freight charges for the other half have been raised abnormally, and these charges have to be added to all imported food stuffs. The scarcity of ships reduces the supplies of grain, while the demand increases with the high rations and wasteful distribution to the army. Prices rise therefore quite according to the regular rule governing prices in relation to supply and demand. If any other cause than war produced the same shortage there would be equal increase in prices.

A general statement that import duties levied on grain tend to increase prices, and the remission of duties to lower them, is almost universally accepted, yet in the tables here given such relations between duties and prices are not specifically shown. In the more recent examples of duties on imports the amounts were so small, in comparison with the total cost of grain, that several other factors which normally influence wheat prices may have operated to mask the effects of the duties. But it is certain that these duties were somehow collected as part of the flour prices by the miller, and as part of the bread prices ultimately collected by the baker from the consumer. And as the grain merchant had to use a larger capital and be put to considerably greater trouble in clearing his goods through the customs, so his extra charges to his miller customer must have been greater than the actual amount of duty paid; in his turn the latter must increase his flour price because of the tax by more than he had paid the grain merchant. The baker finding his flour so much raised must also exact a commission for his extra capital used, and endeavour to pass all the charges on to the consumer. But, as will be explained in detail later, he has not the same facilities as the grain dealer and the miller for making his charges *exactly* right; and, according to his situation and the state of competition in his neighbourhood may either require to pay all the import duties and the additions made by those who have handled his raw material at the several stages before him out of what should normally have been his profits; or in other circumstances the consumer may have to pay a considerable sum more than the initial duty charged. In certain circumstances a remission of import duty may not be totally secured by the consumer, if it happens, as it does so often

in the case of bread, that the amount of the remission cannot be divided into portions that can be deducted from the price of loaves, since the smallest deduction must be a farthing from the price of one two-pound loaf, and that amount would be the equivalent of nearly 5s. on a quarter of wheat.

Thorold Rogers notices another important rule operative in changing prices. When there is a scarcity in an article of prime necessity like wheat, the rise in price is always greatest in the commoner or cheaper kinds of the article. The stint in the article causes a greater demand for inferior kinds. Variations in prices due to such a cause cannot be shown in subjoined tables, since no indications are given of the prices of different kinds or qualities, and even the averages are more likely to be for only one well known or standard kind of grain.

Economists, the most notable of whom were Tooke, Eden, Gregory King, Fleetwood, Arthur Young, Thorold Rogers and others, have attempted with only partial success to trace the connection between historical and economic circumstances and the varying prices of wheat. Their efforts show that great wars have been in progress and wheat prices remained low; revolutions even have had little effects on markets. It is noticeable all through the three centuries under review that high and low prices seem to be in comparatively short cycles of two, three, or four years. These periods, unless some other distinctive cause is known, may generally be ascribed to a very bad harvest or to a succession of such calamities. In the days when the scythe was the only reaping machine, wet weather at harvest was worse than a wet season now, and grain very frequently sprouted before it could be gathered with, of course, great deterioration in value and abnormally high prices for what had been saved in a sound condition.

From the beginning of the seventeenth up to near the end of the eighteenth century the agricultural interests had practically no foreign competition in wheat; on the other hand considerable quantities were exported whenever the harvest was plentiful. The cycles of high prices within that period were evidently therefore due to local causes. From 1647 to 1651, which included the great Civil War period, wheat prices went up considerably over fifty per cent. A reasonable explanation is that as the Civil War was conducted principally over the best wheat growing districts of England, the land during that time was but poorly

cultivated, while there was probably also abnormal demand and great waste consequent on military operations. The high prices which ruled up to 1662 afford evidence of the lasting effects of the causes referred to above, but are also indicative of a general prosperity throughout the kingdom. For nearly the whole of the eighteenth century prices steadily declined until near the end. From 1797 to about 1820 was a period of abnormally high prices and great distress. There had been a succession of bad harvests, and, owing to the demand for men for both military and naval service, in connection with the French Wars, the cultivation of the land was seriously hindered. The growth of great manufacturing industries, through the development of machinery, was another cause of the depletion of farm labour ; there was a steady immigration from the country to the towns. The production of food had not been keeping pace with the increase of population, and when a large number of agricultural workers were drafted away to the wars something like a collapse occurred in agricultural districts.

The figures given in the tables deal with average prices, and with regard to very short periods may be misleading, but over fairly long periods they do teach a lesson. Thus concerning the two decades just referred to, from 1796 to 1816, which included the great French Wars and was before the regulation of prices by Corn Laws, the average price of wheat was 84s. 4d. per quarter. In a succeeding peace period, from 1816 to 1845, when the Corn Laws were passed to protect agricultural interests, the average price was 61s. 2d. In the succeeding period, from 1845 to 1873, under free trade, but with very little foreign competition, the average price was 53s. 2d., but this included the high price years of the Crimean War. In the period from 1873 to 1885, which was one of free trade with strong foreign competition, due to the opening up of immense wheat areas in America, India and Australia and a great reduction in cost of transport by land and sea, the average price fell to 41s. 5d. Since that time the same causes operating and great agricultural developments taking place in the Argentine, prices have continued very low with spasmodic variations. Transit facilities had become so cheap that the whole world was, until the outbreak of the present war, a single market, in which scarcity in one corner was almost automatically balanced by plenty in another. The European countries are more or less buyers of imported grain, and therefore strong competitors of one another for supplies, yet a serious

shortage in one of these countries has only the slightest effects in raising prices. The effect, if there was any, of an import duty of 3d. per cwt. on wheat in 1902-3 cannot be traced in average annual prices.

Reference has already been made to the effects of increasing population on wheat prices. During the latter part of the nineteenth century the improvement in transit facilities easily compensated for the natural deficiency of home grown supplies, but before that the balance was becoming progressively very difficult to adjust. When only sailing ships, and those of small burthen, were employed as wheat carriers, and these subject to the stress of stormy weather, it was extremely difficult in a hurry to relieve shortage due to a poor or a spoiled harvest. A consideration of population alone makes rather hollow the ideal of those who think we can grow sufficient for our complete sustenance. Making due allowance for increased yield due to a better system of agriculture, there is not such a great difference in the amount of land cultivated now and that cultivated at the beginning of the nineteenth century.

In 1528 the population of the British Isles was roughly estimated (there were no census returns then) at about $5\frac{1}{2}$ millions: by 1712 it had risen to $9\frac{1}{2}$ millions; in 1780 it was $12\frac{1}{2}$ millions; in 1801 it was about 16 millions. It rose to $21\frac{1}{4}$ millions by 1821; and to $24\frac{1}{3}$ in 1831. By steady gradations it has now risen to over 46 millions. Land is limited in amount and intensive agriculture also has its limitations. An aggregate area that was barely sufficient to provide grain for 13 million people must be far short of enough for the needs of 46 millions.

In making comparisons of wheat prices over such a long stretch of time as here given, there are several difficulties which cannot be overcome and at the best can only be roughly allowed for. Thus in dealing with annual averages as given in recorded figures, it is not always certain that those taken from one source refer to the same kind of wheat as those from another. Different market prices vary considerably, the differences sometimes representing not different value of grain but added charges for carriage which accrue in one market and not in another. Before 1770 when a Corn Registration Act was passed, the prices were obtained in a loose way from weighers and clerks of markets, and may to some extent, considering the period, be suspect, or at least unreliable for purpose of comparison.

Another possible cause of error in the table for which allowance must be made, is due to difference in the capacity of the vessel used for measuring a bushel of wheat at different periods. Up to 1826 the recognised measure for wheat in the markets of the United Kingdom was the Winchester. bushel, which was at the date given, replaced by the Imperial bushel. The Winchester and Imperial quarters consisted of 8 bushels of the respective sizes. The difference between the two measures is not very great. The Winchester measure is to the Imperial measure as 32 is to 33, that is, 32 quarters Imperial is the equivalent of 33 Winchester quarters ; or, in other words, a Winchester quarter is $\frac{32}{33}$ of an Imperial quarter Although the measuring vessels were not quite alike, it is very probable that the quantity of grain actually delivered under the older system, was as much as that under the new, for it was a common market practice, as no doubt insisted on by buyers in the olden days, that the bushel measure (Winchester) was " heaped " while the legal instructions applied to the Imperial measure, when it was introduced, were that it should not be " heaped " but " stricken by a straight roller." This difference in method of measuring justifies to some extent the retention of prices as recorded, without adjusting them to what they should be if the measure for the whole period had been Imperial. The prices from 1800 to date are all based on the latter measure. There is still cause for misconception as to wheat prices as quoted in market reports. English wheat is sold by the bushel of 63 lb. and a quarter of 8 bushels therefore weighs 504 lb. while imported wheat is quoted by the Imperial quarter, the weight of which is 480 lb. for wheat is now generally sold by weight.*

To prevent misconception regarding wheat prices as given in the subjoined tables, it is advisable that the sources from which they have been obtained should be clearly indicated. From 1600 to 1645 the averages,

* English farmers sell wheat by the quarter of eight bushels, the standard weight of which is about 63 lb., but wheat has weighed as much as 65 lb. per bushel, and farmers have charged in proportion. When the Food Controller (Lord Devonport) on April 16th, 1917, fixed the maximum price of wheat at 78s., he also fixed the quarter by which it should be sold at 480 lb., which has long been the " statutory" quarter for wheat and for maize. But in the c.i.f. trade wheat has for many years been sold at the 480 lb. quarter for American and Canadian from the Atlantic Coast, while American from the Pacific Coast is calculated at a quarter of 500 lb. These weights do not hold when the stuff is landed and sold in port. In London the 480 lb. of American or Canadian wheat becomes a quarter of 496 lb. ex-ship or ex-quay. In Liverpool and Manchester wheat is sold largely by the cental of 100 lb. net. In Glasgow the standard measure is the boll of 240 lb.

have been calculated from prices given for St. John's College, Cambridge, in Thorold Rogers' History of Agriculture and Prices. The figures used there are those relating to the "Corn Rents" evidently paid to the college, and as in such cases there were two parties with opposing interests, it is a safe inference that the receiver would be careful to insist that the prices at the several quarter days were not fixed at too high figures. Rogers notes that the prices here given are for best qualities of wheat only, and that in all the localities which were under the statute (legalizing corn rents) other purchases were made for consumption at lower prices. Thus prices in the records for St. John's College Bakery are considerably lower than those given as for corn rents.

From 1646 to 1679 the wheat prices are those of Windsor market as recorded by Bishop Fleetwood, which are accepted generally as authoritative. Of his method of computing the averages he writes :—"In this computation you are to know, that in every year there are two prices of corn, one of Ladyday, the other of Michaelmas, both which I put together and take the half for the common price of the whole," and he has further noted—"the market I have computed by is somewhat higher than those at a very great distance from London." This last note would seem to imply that prices in London and near were lower than in markets remote, but in Rogers' prices, in which those of many markets are given, it is impossible to discern differences on which any reliable rule in this matter can be established ; sometimes London prices rule higher than in country markets, and sometimes the reverse is the case. Local conditions, the state of the trade at any given time, and the size of stocks in London, had probably much more influence in determining prices on market days than the geographical position of markets. The latter was a factor that would constantly operate but would be minimised in influence on occasions by accidental circumstances.

From 1780 to 1799 wheat prices were obtained from Barker's "Trade and Finance Annual," and from the statistical tables published in the Annual Register. The only explanatory note that may be offered in connection with these figures, is that the registers were, in the absence of anything actually official, generally accepted as correct.

Wheat prices from 1800 to 1912 are those given in a Government return printed October 21st, 1912. This return also gives prices of bread for

same period, and these have been used. From 1912 to date the average wheat prices have been calculated from charts and tables published by Broomhall in "Milling," etc.

Prices obtained from such a variety of sources may lack the quality of continuity and in cases may not be exactly comparable, but, if an unbroken record is desired these sources are probably as reliable as any from which such information can be obtained. As the purpose of the tables is rather to show the *relations* of wheat and bread prices, than merely to record the former, and, as the bread prices given are for the most part obtained from independent sources, slight discrepancies in wheat averages are not of paramount importance.

FLOUR PRICES.

If an attempt is made to discover the actual price of flour to-day the figures can only be given with explanations that almost obscure them. Thus price quotations sometimes include delivery charges, and these of course vary according to distance from the supplying mill, although the competition amongst millers is so great that in some cases the miller may be prepared to bear part of the carriage out of income. Again, millers at the large grain ports are in a position to sell " strong " flours, which are made largely from imported wheat, cheaper than inland millers. In their turn the inland millers, if in wheat growing districts, have the advantage in selling " soft " flour, which may contain much local wheat. In other days, when flour contained little imported wheat, there were many millers whose business consisted wholly in supplying flour to bakers within a radius of only a few miles from the mills; then prices, so far as position of the mills affected them, were more uniform. In that early day the millstone was the only wheat grinding machine, and its use necessitated practically only one grade of what we would now call fine flour. There was in millstone days a seconds flour, but it was obtained by " redressing," and sometimes regrinding, the material that the sieves had separated as offal from the first grinding operation. It was dark flour with a tendency to stickiness when made into dough and with a sweet taste. The point of importance in relation to the question of flour grade, is that the difference between fine flour and this seconds was so pronounced that there was no probability of one being mistaken for the other. In the modern system of milling by what is called " gradual reduction," the wheat is not, as in the old system, ground into meal and then separated by sieves into the different products of the operation. As the name given to the modern system implies, the wheat is broken down more or less gradually and each separate product treated by itself. Thus by what are called the " break rolls " the wheat is broken into pieces; the theory really is that it is split into halves, the object being to set free the fluff or dirt which has settled in the crease of the wheat. In practice the ideal

is hardly reached, but the wheat is broken into irregular pieces, and by the shearing action of the rolls, which have finely corrugated surfaces, and revolve at slightly different speeds, the whole bran, which includes the parts usually included as "offal" is scraped off and the endosperm, or inner part of the grain, separated as fine pellets. This is technically known as "semolina." When the endosperm pellets are passed through smooth rolls, the waxy little nodule, which is the germ of the grain, is flattened, and can then be separated from the other parts by suitable sieves. The semolina, ground very fine on smooth rolls, constitutes the highest grade of flour, and its weight may be some 40 or 50 per cent. of the total weight of wheat used in its production. From 100 lb. of wheat there is normally from 70 to 74 lb. of white flour obtained, so that, besides the 50 per cent. of the highest grade, there is about 24 per cent. of lower grade. This latter flour is that produced inadvertently when the wheat is passing through the "break rolls," as well as that which adheres to the bran when it is first scraped off, but is afterwards separated. The total flour from wheat, if sold as one grade, is generally designated "Household," or in some districts "Bakers grade." The highest grades are called Patents; sometimes 1st Patents and 2nd Patents and are of course sold at prices from 3s. to 5s. more than the "Household." Other arbitrary names for different grades are used by millers. In the tables here given the prices refer to household grade of flour.

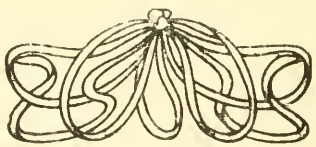
As there are no continuous records of flour prices, that can be comparable, the plan has been followed of calculating all the flour prices from those of wheat, except those for the last decade, which have been obtained principally from the market reports of the National Association of Master Bakers *Review*. The basis of the calculation is the assumption that in the absence of disturbing causes the intrinsic value of a household grade of flour per sack of 280 lb. should be about $\frac{3}{4}$ that of a quarter of wheat form which it is made. The average prices taken for flour per sack have therefore been as 4 to 3 of the average prices of wheat. This was the only possible method of obtaining flour price averages that would be nearly correct for the long period chosen.

In dealing with so extended a time some explanation is necessary to assist in a due appraisement of the figures given. At the beginning of the seventeenth century, bakers were either the millers of the grain

themselves, or were buyers of grain, sending it to "custom" mills in their immediate neighbourhood, receiving from the miller the whole product of their grain, and only paying him an agreed toll for work done. According to Pownall the time when a distinct separation of the trades of bakers and mealmen, as millers were called, was about the first decade of the eighteenth century, but the change, like all others in industrial organisation, had probably been going on for very many years before. Thus in tables of "allowances" published in 1495 one of the items is for the miller, who is allotted 4d. for grinding a quarter of wheat, and in one published in 1592 the miller's toll is given as 1s. 4d. for a quarter of wheat. As these items were stipulated amongst the baker's "allowances," the miller was evidently subject to assize regulations, treated in fact as the servant of the baker with a fixed rate of wages. The change referred to by Pownall is that of a distinct separation of the two trades by which the mealmen became in fact merchant millers, buying the wheat, making it into flour and offal, and marketing both, the first to bakers, the other to farmers and others for cattle feeding. This development freed the miller from the regulations of the assize laws under which bakers continued for quite a century longer.

While flour prices have been calculated as depending solely on the prices of wheat, there are in practice all sorts of modifying factors. In the old days when there was practically only one grade of white flour, wheat prices had necessarily the paramount influence in determining what the price of flour should be, the only disturbing factor being the price obtained for offal. If for any reason the value of the latter rose the miller would be able to slightly reduce the price of his flour below what it would naturally be in relation to wheat, and in any district in which keen competition amongst millers did exist cheap flour might have been really sold. The value of offal has still a highly important share in determining the price of flour; but another influence has appeared in connection with the sale of different grades. When, on account of excessive competition amongst bakers, bread prices fall to a level at which it is unprofitable to use the highest grades of flour, then millers who have a market for several grades, may raise the price of the lower. As stocks of the dearer sorts tend to accumulate, these are likly to fall in price; in other words the best flour is cheap. On other occasions when opposite conditions obtain and good bread prices induce the baker

to buy the best flour in greatest quantity, then the miller must make as much high grade flour as possible. This he cannnot do without making the due proportion of low grade flour. The latter is in the circumstances likely to accumulate, and in consequence be sold below, in cases even considerably below, its proper value. There is yet another factor which may warp flour values from their natural level. Prices of home milled flours, on account of our open ports are much influenced, if not actually determined, by prices of imported flour. Considerations, other than intrinsic values, have before now caused large quantitles of flour to be consigned to our markets from America, Australia, France, etc., and the home millers, even though unable to make flour from wheat obtained from those consigning countries at a price as low as the consigned flour, are still constrained to take a low price, although by doing so they have for the time being to greatly reduce their normal profits. All these considerations must be recognised as modifying the rule that the price of flour is governed by the price of wheat. The general rule that the price of a 280 lb. sack of 70 per cent. flour is roughly three fourths of that of a quarter of wheat of the quality from which it is made may be considered as in abeyance in the present abnormal circumstances of almost universal war.



BREAD PRICES.

The people do not eat wheat or flour, do not even buy these in any considerable quantity, but they do buy and eat bread. In relation to their incomes and their expenditure, it is the price of bread and not of flour or wheat that matters. So far as prices of these raw materials of the miller and baker do influence the price of bread they are of consequence, but they are not the only determining factors.

In the period for which prices are first given, beginning at 1600 and up to 1815, bakers were under the Assize of Bread Laws, and, as already noticed, millers up to about 1710, were considered merely as workers for the bakers at a fixed toll, and in an indirect way were also subject to Assize of Bread Rules. The price of bread was fixed by the magistrates sitting as an Assize Court. The Court had to perform its functions strictly according to rule. It was supplied with the average current prices of wheat in certain authorized markets by the meal weighers or clerks of the markets. By regulation under the Assize Acts, bakers were assigned a fixed sum per quarter of wheat as the "allowance." In the earlier tables the items of this "allowance" were definitely allocated. Thus in that fixed in 1592, which still obtained at the time of the commencement of the present tables, the following items were specified :—

	s.	d.
Fuel		6
Two journeymen and two boys ..	1	8
Yeast	1	0
Candles and salt		4
Himself, his wife, his children and house rent	2	0
The millers toll	1	4
	6	10

There was a specific method of incorporating the " allowance " amongst the total debits in the cost of breadmaking. The Assize Court was instructed to add this allowance to the prevailing price of a quarter of wheat, and divide the sum by the number of peck loaves which might be made from a quarter of wheat less two loaves, which the baker was allowed to " his advantage." The peck loaf weighed 17 lb. 6 oz., and as it contained four quarter pecks, or as now named " quarterns," each of these weighed 4 lb. 5 oz. 8 drams.

According to Young the Statute 1, Geo. I. (1714) is the earliest enactment which authorizes the manufacture of definite *sized* loaves—namely, peck, half peck, quartern, and half quartern, " so as the same could be made and sold both as to weight and price in proportion to the assize table." Before that date the table provided only for weights of loaves, the prices of which were fixed. In the time prior to 1600 it seems the farthing loaf was the standard size ; later tables specified the weights for the halfpenny and penny loaves, but made no reference to farthing size. Later tables still specified for loaves the price of which was fixed but the weights altered, according to the price of wheat or flour, and at the same time gave prices for loaves the weight of which was already fixed but the price varying with the market price of wheat or flour. The first set of these latter tables referred to loaves as " Assize Bread," and provided for " Large Assize Bread " as eighteenpenny, twelvepenny, and sixpenny loaves, and for " Small Assize Bread " as twopenny and penny loaves. The loaves sold by designation as peck, half peck, and quartern loaves had their prices fixed in what was called the price table, and were therefore known as " Priced Bread." According to the method adopted by the Assize Courts in fixing the price of bread so was it made easy or difficult for bakers to conform. There is no direct evidence to show why the system of fixing prices and altering weights to suit the price of wheat was modified by the adoption of an alternative method of fixing weights and altering prices, but it was probably because bakers had practically ceased making the smaller sizes of loaves, and made only very large ones. In such a case there would be little hardship from the bakers' point of view in the Assize Courts fixing prices for loaves of statutory weights. But when small loaves of say, 2 lb. size are the great majority of all sorts made, as at present, then the plan of altering prices only, and leaving the weight rigidly fixed, is not only

inconvenient, but actually makes it impossible for the price of bread to be kept nearly in the correct relation to the price of wheat or of flour. Thus the smallest possible alteration in the *price* of a 2 lb. loaf is a farthing,* but such an alteration is the equivalent of nearly 4s. on the price of a 280 lb. sack of flour. There may be alterations in flour prices for long periods which range from 1s. to 3s. per sack, and it may be years in normal times before the full 4s. of either increase or decrease has taken place. In such circumstances, in Assize times, if the court lowered the price of the 4 lb. loaf by ½d. when flour had fallen say 2s., it was evidently forcing the baker to accept 2s. less per sack of "allowance"† than was his due, or, if the price was not lowered, forcing the public to pay 2s. per sack more than it ought. So, in a rising market, either the baker or the public were forced to lose. The theory was that losses on one occasion were balanced by gains on another but in practice the theory was so badly realised that the findings of the Bread Assize Courts were the causes of constant agitation and complaint. One change after another was made in an effort to remedy the trouble. Young states that there were no less than eleven Acts of Parliament passed in the reign of Geo. III. regulating the Assize, each amending and explaining the preceding ones in the most complicated way.

The troubles incident to the operations of the Bread Assize Courts caused magistrates, where the option was allowed, to refrain from interfering in the matter at all, with the result that, for considerable periods in many districts there was no Assize of Bread set. The culmination was reached when, in 1815, after an exhaustive enquiry by a Parliamentary Commission, the Assize of Bread Law was abolished and the baker from

* In the regulations attached to Assize tables, the stipulation was made that in cases in which small loaves (2 lb.) were allowed, the baker should charge half a farthing more for such loaves if the Assize price necessitated the splitting of a farthing Thus if the price of the "quartern" loaf was fixed at 6¼d., the baker was entitled to charge 3⅛d. for a "half-quartern."

† Local custom determines to some extent the names used and the weight of packages of flour. In London a sack is 280 lb., and this weight is generally recognised throughout England, Scotland and Ireland. But in the London area a half-sack is 140 lb. is referred as a "bag" of flour. In the Midland district, with Birmingham as centre, the sack of flour weighs only 224 lb. In Liverpool, bakers make all their calculation by the "pack," which weighs 240 lb. In America the standard weight for flour is the barrel of 196 lb. In Canada and U.S.A. much flour is put up in bags weighing 100 lb. In Australasia the standard sack weighs 200 lb., and the ton 2,000 lb. Australian prices quoted as they generally are at so much per ton, have for comparison to be adjusted to our heavier ton of 2,240 lb.

that date was allowed to charge what price he could afford for his bread. But after the repeal of the Assize Law a new Act was passed making provision for fixed weights for loaves. Thus the peck loaf was to weigh 17 lb. 6 oz., half peck 8lb 11 oz., quarter peck 4 lb. 5½ oz, half quarter peck 2 lb. 2¾ oz.

This Act, although the Assize Courts were abolished, retained the rule of fixed weights which had been the cause of most of the trouble, and it evidently was ineffective, for just seven years after (1822) a new Bread Act was passed which abolished fixed weights for loaves and gave the baker liberty " to make, bake, sell, and offer for sale, bread made of such weight or size as such bakers or sellers of bread shall think fit ; any law or usage to the contrary notwithstanding." The old designations for loaves were still in regular use but the " quartern," evidently as a matter of convenience, weighed only* 4 lb. instead of the 4 lb. 5½ ozs. of the Assize tables and this weight of bread is still adopted as the standard on which bread prices generally are calculated.

To get free from the intrusic difficulty, with fixed weight loaves, of keeping prices in proper relation to the price of flour, bakers within the last five or six years have been openly reverting to the other plan of selling bread allowed by the original Assize Bread Law. They have fixed certain standard prices for loaves and varied the weights by an ounce or more according to small changes in the price of flour. In the trade this was called the " Assize System " of selling and it had been adopted to a greater or less extent in most large towns, Manchester and Liverpool wholly. As in normal times about 1 oz. alteration in the weight of a 4 lb. loaf would balance an alteration of 1s. in the price of a sack of flour, this method of working evidently is fairer to both public and baker than the other which prevents any just alteration in the price of bread unless flour changes in price by 4s. per sack. The baker in the case of the 2 lb. loaf would of course alter its weight by ½ oz. for an alteration of 1s. in the price of a sack of flour.

The Order recently issued by the Food Controller fixing weights of loaves at 2 lb. and 4 lb. brings back to the baker all the difficulty as experienced during the Bread Assize time. It is *impossible* for the baker to closely follow

* In his history of the Worshipful Company of Bakers, Mr. Sydney Young says he cannot trace the Act which fixed the weight of the quartern loaf at 4 lb. There is no such Act in existence; the change has occurred by the evolution of custom.

the price of flour in that of his bread. The difficulty will not be apparent while prices remain nearly steady, however high they be. But there is another effect of the Food Controller's action which hardly conduces to the advantage of the public. As soon as the Order was made for fixed weight of loaves at 2 lb., etc., the price of bread was raised. The baker could do no other. Whatever precautions he may take he cannot regulate the weight of all his loaves exactly. The last operation over which he has any control is when he weighs the pieces for the separate loaves. When these are baking in the oven, although exactly the same weight on entering they lose different quantities of moisture according to their position in the oven, etc. Differences from this and other causes, over which the baker has practically no control, may range as much as 2 oz. amongst individual loaves. To ensure therefore that the lightest loaf in the batch weighs 2 lb. after it is 30 hours old as the Food Controller's Order stipulates, an excessive allowance of dough has to be made for losses.

The consequence is that while no customer may get less than 2 lb. most customers must get more than 2 lb. and because the baker has to allow such a large margin he is forced to increase his price by one farthing—the lowest available coin. Thus customers getting only bare weight pay a farthing, while those getting only a little more, probably less than a farthing's worth, have also to pay that farthing. In ordinary circumstances the baker got over the difficulty and the public got the full value, by his selling loaves of a guaranteed minimum weight, which was in most cases less than the actual weight, and the customer therefore shared with him the chances of slight variations; weights of loaves do not really correspond with the variations in quantity of real bread; the difference is not due to loss of weight of dry solid matter—which is food—but to loss of water only.

From the foregoing explanations it will be apparent that tables of bread prices as recorded for three hundred years under such various systems of selling may have little in common to afford fair comparison. To surmount difficulty all the recorded bread prices up to 1822 have been reduced as for 4 lb. loaves instead of 4 lb. 5½ oz. as required by the old statutes.

Bread prices from 1600 to 1735 have been calculated on the basis of recorded wheat prices with addition of the legal allowance made to bakers for each period in the manner already described. These allowances are

recorded. Thus from 1598 to about 1648 it was 6s. 10d. for manufacturing a quarter of wheat into bread. From 1649 to about 1688 it was reduced to 6s. per quarter. From that date to 1709 it was 10s. per quarter. After 1796 it was then raised to 12s. per quarter. In 1796 it was 14s. per quarter and in 1815, when the Assize Law was abolished, it stood at 16s. 9d. the quarter.

Bread prices from 1735 to 1799 are taken from a return issued by the City Corporation of London entitled "An accurate extract of the price of the quartern loaf of wheaten bread at the commencement and conclusion of the several mayoralties herein stated, from the year 1735 to 1799." From 1800 to 1910 wheat and bread prices were taken from a Government return, already referred to, published in 1912. In that return the following explanation is given as to the sources for which bread prices were obtained between the dates given :—

"The prices of bread for the years 1800-14 are based on the *Return of the price of the quartern loaf of wheaten bread* (H.C. 109-1814-5 X.), and those for 1815-33 on information furnished by the Worshipful Company of Bakers. The prices for 1834-48 have been taken from the *Tables of Revenue*, Population, etc., Part xviii. (No. 1159, 1850, liv.), and are for the month of June in each year specified. The prices for 1849 and 1851-3 have been estimated; those for 1850 and 1854-74 are based on figures in *Haydn's Dictionary of Dates*, and those for 1875-1910 are compiled from the Report on Prices (H.C. 321, 1903), and the 15th *Abstract of Labour* Statistics (Ed. 6228)." The report continues: "It is not known how far the figures obtained from the various statistical sources are strictly comparable, but they are believed to indicate approximately the course of bread prices within the period." The reservations here made to a comparison of bread prices, apply whether these are for different geographical districts or for different periods of time.

There is always the question of quality to be considered. Like other commodities bread is made in several qualities. That produced wholly from the highest grade flour is good value for at least a penny more per four-pound loaf than that made from the lowest grade, and a halfpenny more per four pounds than that from medium quality. In districts far removed from the large milling centres, the baker has the cost of carriage to add to the price of his flour, while the absence of very

keen competition amongst millers, and the higher selling costs, are responsible for another increment of increase in price. These charges the baker must pass on to customers as part of the price of bread. Although the expenses of the country baker may be lower than those of one in a populous centre, his cost of manufacture is little, if any, less, because of the smallness of his trade, while his distributive expenses may be much more on account of the scattered position of his customers. But in towns and country alike the price of bread includes items, varying in different cases, that have nothing to do with intrinsic value. When credit is given there is the use of capital involved, a considerable cost for books and book-keeping, and invariably a percentage of bad debts which must in some way be liquidated out of the money received from those who pay. A business which distributes bread over a wide area and gives credit, must have a higher price than one in which the bread is sold in the shop direct to consumers for cash. In trades in which the former set of conditions obtain the price includes an item for credit and a much larger item for cost of distribution.

When we come to consider prices as between different periods, the comparison may be still more misleading. Bread as made in 1600 was very unlike that of 1700 ; a greater disparity existed between the latter and that of 1800, while the bread of 1900 had changed more than in any of the previous periods mentioned. Part of these alterations was due to changing conditions in the state of the people ; but a greater part has been on account of the improvements in milling and separating operations. In the beginning of the seventeenth century, the bakers were their own millers, except when tied to the mills of the Lord of the Manor ; the apparatus for milling was crude and hand-driven and the sieves for sifting and separating (" bolting ") the various products were still more simple and crude. The finest flour was nothing like the fine flour of to-day, because of the roughness of the apparatus, also because the wheat from which it was obtained was wholly home grown and comparatively soft, and it was not always cleaned. In the early part of the eighteenth century milling had become to some extent a distinct business, and with specialisation had come greater proficiency. There was a white flour and a brown product also flour, besides the bran. The improvements in milling were for the most part only improvements in separations. Wheat had still to be ground

into meal on stones, but sieves were finer and more expeditious in their work. Since the "Roller System," or, as it is sometimes called, the gradual reduction process, with steel rolls instead of composite stones was introduced (first in Hungary about 1879), wheat is no longer ground into meal, but the grosser parts are separated, as an initial operation, from the parts suitable for making fine flour, so that the latter product when ultimately ground, is white; almost without a speck. What has really happened is that the product hitherto called white flour has been by clever mechanical contrivances graded into two or three or even four qualities of white flour, the darkest of which is probably whiter than the whitest of that of the early eighteenth century, and different entirely in colour from that of the time for which prices are first given. Comparisons to the detriment of the character or quality of the old-time bread may not appear just, in the light of the estimate of quality, as made by contemporary judges, but only because they could not anticipate the changes that have taken place. In any case, the average prices for the early periods were evidently not maximum prices, for there seems to have been variety enough in that day. There is no better description of the bread in the days of Elizabeth than that written by a country parson of the time—Wm. Harrison.* He writes: "The bread throughout the land is made of such grain as the soil yieldeth; nevertheless, the gentility commonly provide themselves sufficiently of wheat for their own tables, whilst their household, and poor neighbours, in some shires, are forced to content themselves with rye, or barley, yea, and in time of dearth, many with bread made of beans, peas, or oats, or of all together and some acorns among, of which scourge the poorest do soonest taste, sith they are least able to provide themselves of better. I will not say that this extremity is oft so well to be seen in time of plenty as of dearth, but if I should, I could easily bring my trial. For, albeit that there be much more ground eared now almost in every place than hath been of late years, yet such a price of corn continueth in each town and market without any just cause (except it be that landlords do get licences to carry corn out of the land, only to keep up the prices for their own private gains and ruin of the Commonwealth), that the artificer and poor labouring man is not able to reach unto it, but is driven to content himself

* Work published as first volume of Holinshed's Chronicle in 1577 entitled "An Historical description of the Island of Britain, in three books." Has been reprinted in *Camelot Series* with the title "Elizabethan England." Walter Scott & Co., London.

with horse corn—I mean beans, peas, oats, tares, and lentils; and therefore, it is a true proverb, and never so well verified as now, that "Hunger setteth his first foot into the horse-manger." If the world last awhile after this rate, wheat and rye will be no grain for poor men to feed on; and some caterpillars there are that can say so much already.

Of bread made of wheat we have sundry sorts daily brought to the table, whereof the first and most excellent is the manchet, which we commonly call white bread, in Latin *primarius panis*. Whereof Budeus also speaketh, in his first book *De asse;* and our good workmen deliver commonly such proportion that of the flour of one bushel with another they make forty cast of manchet, of which every loaf weigheth eight ounces into the oven, and six ounces out as I have been informed. The second is the cheat or wheaten bread, so named because the colour thereof resembleth the gray or yellowish wheat, being clean and well dressed, and out of this is the coarsest of the bran (usually called gurgeons or pollard) taken. The ravalled is a kind of cheat bread also, but it retaineth more of the gross, and less of the pure substance of the wheat; and this, being more slightly wrought up, is used in the halls of the nobility and gentry only, whereas the other either is or should be baked in good towns of an appointed *size* (assize) according to such price as the corn doth bear, and by a statute provided by King John in that behalf. The *size* (assize) of bread is very ill-kept, or not at all looked unto in the country towns and markets. The ravalled cheat is generally so made, that out of one bushel of meal, after two and twenty pounds of bran be sifted and taken from it (whereunto they add the gurgeons that rise from the manchet) they make thirty cast, every loaf weighing eighteen ounces into the oven and sixteen ounces out; and besides this, they so handle the matter that to every bushel of meal they add only two and twenty, or three and twenty pounds of water, washing also, in some houses, their corn before it go to the mill, whereby their manchet bread is more excellent in colour, and pleasing to the eye, than otherwise it would be. The next sort is named brown bread, of the colour of which we have two sorts, one baked up as it cometh from the mill, so that neither the bran nor the flour are any whit diminished; this Celsus called *autopirus panis*, lib. 2, and putteth it in a second place of nourishment. The other hath no flour left therein at all, howbeit he called it *Panem Cibarium*, and it is not only the worst and weakest of all the

other sorts, but also appointed in all time for servants, slaves, and the inferior kind of people to feed upon. Hereunto likewise, because it is dry and brittle in the working (for it will hardly be made up handsomely into loaves), some add a portion of rye meal in our time, whereby the rough dryness or dry roughness thereof is somewhat qualified, and then it is named *miscelin*, that is bread made of mingled corn, albeit that divers do sow or mingle wheat and rye of set purpose at the mill, or before it comes there, and sell the same at the markets under the aforesaid name." From this interesting detailed description it appears that where there was money to pay there were always dear goods to sell ; expedients of one sort or another were discovered for satisfying the taste of the fastidious. Now the variety of bread is considerably greater, but except in the case of special and fancy breads, the different qualities are not now distinguished by special names. The different grades of flour already referred to are all made into what is called *plain bread*, although of very different quality in one district compared with another. The quality or kind called " fancy bread," was only distinguished from plain bread at the beginning of the nineteenth century by being baked rather crusty in tins and rasped after it was taken from the oven. For convenience the weight of this sort was not determined by statute even when plain bread was, but it was sold generally in smaller pieces than the plain at the same price per loaf. The bread now recognised by bakers as fancy bread is that made of different shape, or by some other means easily distinguished, from plain ; or if additions of expensive materials like butter, or milk, or sugar, or a concentrated malt extract are made to the dough during manufacture, the resultant bread is recognised as fancy and is either sold at a higher price than plain bread or at same price for a smaller quantity. Within the last forty years there has been a large trade done in what are called " proprietary " and " patent " breads. The merchant or proprietor of such bread sells the recipe to the baker, and in most cases also sells the material from which the bread is made. In some sorts this is a mixture of fine flour and wheat germ prepared in a particular way, the latter also in excessive proportion above that in which it naturally exists in the wheat. In other cases wholemeal, wheat, semolina and a special malt extract are the essential ingredients. For others a meal is prepared containing a greater or less quantity of malted grain, either barley or wheat. As these special breads all contain material more expensive than ordinary flour or meal, they are, of course, sold at a

price higher than that of plain bread. Here again for convenience the adjustment in value is generally made by selling a less weight of these sorts for a certain sum, than of plain bread. The tables of bread prices given refer for each period to the kind of bread accepted for the moment as standard quality for the lower middle classes, and fancy bread however defined is not considered.

PRICES WITH NOTES FOR THREE HUNDRED and SEVENTEEN YEARS.

Year.	Average Price of Wheat per quarter.	Average Price of Flour per Sack (280 lb.)	Average Price of Bread, per 4 lb.	Reigning Monarchs.	Events Likely to Influence Prices and Notes.
	s. d.	s. d.	d.		
1600	28 0	21 0	4.02	Elizabeth 1558 to	Allowance to bakers 1598 to 1628 = 6s. 10d. per qr. of wheat.
1601	30 11	23 3	4.3	1603	
1602	21 10	16 5	3.3		
1603	22 11	17 3	3.4	James	
1604	22 8	17 0	3.4	VII. of	
1605	27 10	20 11	4.0	Scotland	
1606	24 2	18 2	3.6	and I. of	
1607	28 8	21 6	4.1	England	
1608	34 2	25 8	4.7	1603 to	
1609	45 8	34 3	5.8	1625	
1610	30 3	22 9	4.2		
1611	31 6	23 8	4.4		
1612	35 9	26 10	4.9		
1613	38 8	29 0	5.2		
1614	42 8	32 0	5.7		
1615	35 0	26 3	4.8		
1616	36 8	27 6	5.0		
1617	39 0	29 3	5.3		
1618	40 8	30 6	5.5		
1619	29 10	22 5	4.2		
1620	22 3	16 11	3.35		
1621	21 6	16 2	3.27		
1622	37 0	27 3	5.05		
1623	48 10	36 8	6.4		
1624	35 11	27 9	5.0		
1625	40 3	30 3	5.4	Charles I.	
1626	47 2	35 5	6.2	1625 to	
1627	31 6	23 8	4.4	1649	
1628	22 6	16 11	3.38		

Year.	Average Price of Wheat per quarter.	Average Price of Flour per Sack (280 lb.)	Average Price of Bread, per 4lb.	Reigning Monarchs	Events Likely to Influence Prices and Notes.
	s. d.	s. d.	d.		
1629	30 3	22 9	4.2		Allowance to bakers 1629 to 1688 = 6s. per qr. of wheat.
1630	36 8	27 6	5.0		
1631	61 10	46 5	7.8		
1632	40 10	30 8	5.4		Owing to increase of English trade, through troubled condition of Continent, there was a great wave of prosperity before the Civil War.
1633	42 6	31 11	5.6		
1634	40 10	30 8	5.4		
1635	42 8	32 0	5.6		
1636	42 0	31 6	5.54		
1637	36 11	27 9	5.0		
1638	46 8	35 0	6.0		
1639	34 9	26 3	4.7		
1640	27 9	20 10	3.9		
1641	35 8	26 9	4.8		
1642	31 0	23 3	4.27		Opening of Civil War.
1643	29 2	21 11	4.05		
1644	32 8	24 6	4.46		
1645	32 10	24 8	4.48		During Civil War there was much poverty: very many were imprisoned for debt and a greater number in constant hiding.
1646	48 0	36 0	6.2		
1647	73 8	51 9	9.2		Population of Great Britain about 6,000,000.
1648	85 0	63 9	10.5		
1649	80 0	60 0	9.9	Commonwealth	
1650	76 8	57 6	9.5		
1651	73. 4	55 0	9.15	1649 to	Labourers' wages at this period 8s. per week; carpenters' wages 9s. per week.
1652	49 6	37 2	6.4	1653	
1653	35 6	26 8	4.78	O. Cromwell	
1654	26 0	19 6	3.6		
1655	33 4	25 0	4.53	Protector	
1656	43 0	32 3	5.6	1653 to	
1657	46 8	35 0	6.07	1658	
1658	65 0	48 9	8.2	R. Cromwell Protector	
1659	66 0	49 6	8.3	Commonwealth	
1660	56 6	42 5	7.2	Charles II. 1660	
1661	70 0	52 6	8.7	to 1685	
1662	74 0	55 6	9.2		
1663	57 0	42 9	7.27		

Year.	Average Price of Wheat per quarter.		Average Price of Flour per Sack (280 lb.)		Average Price of Bread, per 4lb.	Reigning Monarchs	Events Likely to Influence Prices and Notes.
	s.	d,	s.	d.	d.		
1664	40	6	30	5	5·36		
1665	49	5	37	1	6·4		Plague in London 1664 to 1666.
1666	36	0	27	0	4·8		Great Fire in London 1666.
1667	36	0	27	0	4·8		
1668	40	0	30	0	5·3		
1669	44	4	33	3	5·8		
1670	41	8	31	3	5·5		
1671	42	0	31	6	5·53		
1672	41	0	30	9	5·4		
1673	46	8	35	0	6·07		
1674	68	8	31	6	8.6		
1675	64	8	48	6	8.1		
1676	38	0	28	6	5·07		
1677	44	0	31	6	5·7		
1678	59	0	44	3	7·5		
1679	60	0	45	0	7·6		
1680	40	0	30	0	5·3		
1681	41	5	31	1	5·4		
1682	39	1	29	4	5·2		
1683	35	6	26	8	4·8		
1684	39	1	29	4	5·2		
1685	41	5	31	1	5·4	James II.	
1686	30	2	22	8	4·1	1685 to	
1687	22	4	16	9	3·2	1688	
1688	40	10	30	8	5·4	Interregnum	Revolution in England.
1689	26	8	20	0	4·2	William	Great European war starts for 9 yrs.
1690	30	9	23	1	4·7	III. and	Allowance to bakers from 1689 to
1691	30	2	22	8	4.6	Mary II.	1709 fixed at 10s. per qr. of wheat.
1692	41	5	31	1	5·9	1689 to	
1693	60	1	45	1	8.08	1695	
1694	56	10	42	8	7·7		
1695	47	1	35	4	6·5	William	
1696	63	1	47	4	8·4	III. 1695	
1697	53	4	40	0	7·3	to 1702	
1698	60	9	45	7	8.1		
1699	56	10	42	8	7·7		
1700	35	6	26	8	5·2		Labourers' wages at this period
1701	33	5	25	1	5.0		8s. 6d. per week.; carpenters'
1702	26	2	19	8	4.1	Anne	wages 12s. 9d. per week.
1703	32	0	24	0	4.8	1702 to	Great storms: fearful loss of life,
1704	41	4	31	0	5·9	1714	ships and cattle.
1705	26	8	20	0	4.2		

Year.	Average Price of Wheat per quarter.	Average Price of Flour per Sack (280 lb.)	Average Price of Bread, per 4lb.	Reigning Monarchs	Events Likely to Influence Prices and Notes.
	s. d.	s, d.	d.		
1706	32 1	17 4	3·7		
1707	25 4	19 0	4·1		Union of England and Scotland.
1708	36 10	27 8	5·4		
1709	69 9	52 4	9·2		New Bread Act and new tables of
1710	69 4	52 3	9·16		Assize. "Allowance" to bakers
1711	48 0	36 0	6.92		raised to 12s. per qr. of wheat.
1712	41 2	30 11	6.1		Population of Great Britain
1713	45 4	34 0	6.6		9,429,000 (1712)
1714	44 9	33 7	6.54	George I.	First Bread Act passed which
1715	38 2	28 8	5.8	1714 to	authorised the manufacture of
1716	42 8	32 0	6.3	1727	definite "sized" loaves, viz.,
1717	40 7	30 6	6.06		peck, half peck, quartern and
1718	34 6	25 11	5.36		half quartern, and it fixed the
1719	31 3	23 4	5.0		weight of the peck at 17lb 6 oz.
1720	32 10	24 8	5.1		From 1720 to 1755 was a period
1721	33 4	25 0	5.2		of great prosperity,
1722	32 0	24 0	5.07		
1723	30 10	23 2	4.9		
1724	32 10	24 8	5.1		
1725	43 1	32 4	6.35		
1726	40 10	30 8	6.09		
1727	37 4	28 0	5.7	George	
1728	48 5	36 4	7.0	II. 1727	
1729	41 7	31 3	6.18	to 1760	
1730	32 5	24 4	4.9		
1731	29 2	21 11	4.5		
1732	23 8	17 9	3.88		
1733	25 2	18 11	4.05		
1734	30 9	23 2	4.7		
1735	38 2	28 8	5.07		
1736	35 10	26 11	5.3		Public credit firmly established,
1737	33 9	25 4	5.07		agriculture improved and value of
1738	31 6	23 8	5.3		land increased. Immense sums
1739	34 2	25 8	5.52		expended in enclosures of waste
1740	45 1	33 10	7.0		land for cultivation.
1741	41 5	31 1	4.83		
1742	30 2	22 8	4.37		
1743	22 1	16 7	4.00		
1744	22 1	16 7	4.00		
1745	24 5	18 4	4.37		War with France: Chas. Edward
1746	34 8	26 0	5.07		rebellion in Scotland.
1747	30 11	23 3	4.70		
1748	32 10	24 8	5.52		

Year.	Average Price of Wheat per quarter.	Average Price of Flour per Sack (280 lb.)	Average Price of Bread, per 4lb.	Reigning Monarchs	Events Likely to Influence Prices and Notes.
	s. d.	s. d.	d.		
1749	32 10	24 8	4.83		Seven years peace starts.
1750	28 10	21 8	4.70		
1751	34 2	25 8	5.52		
1752	37 2	27 11	5.07		
1753	39 8	29 9	5.52		
1754	30 9	23 1	4.70		
1755	30 1	22 7	4.70		War starts with France.
1576	40 1	30 1	7.0		
1757	53 4	40 0	7.0		Bread Act which provides for assizing and pricing two sorts of bread.
1758	44 5	33 4	5.52		
1759	35 3	26 6	4.70		This Act was passed because of
1760	32 5	24 5	5.07	George	difficulty in keeping the law, and
1761	26 9	20 1	4.14	III. 1760	to satisfy bakers and mealmen
1762	34 8	26 0	5.07	to 1820	(1758).
1763	36 1	27 1	5.52		
1764	41 5	31 1	6.00		
1765	48 0	36 0	6.44		
1766	43 1	32 4	7.4		
1767	47 4	35 6	7.9		
1768	53 9	40 1	6.0		
1769	40 7	30 6	5.52		1769—Steam Engine Patented.
1770	43 6	32 8	6.0		1770—Corn Registration Act.
1771	47 2	35 5	6.67		
1772	50 8	38 0	7.4		
1773	51 0	38 3	7.0		New Bread Act to remove Anomalies of 8th Anne.
1774	52 8	39 6	7.4		War of American Independence starts 1774. Declaration of Independence 1776.
1775	48 4	36 3	6.0		
1776	38 2	28 8	6.0		
1777	45 6	34 2	6.2		
1778	42 0	31 6	5.75		
1779	33 8	25 3	4.83		
1780	36 0	27 0	7.0		Population of Great Britain 12,560,000 (1780).
1781	40 6	30 6	6.44		
1782	49 3	37 0	7.9		From 1782 to 1792 there was ten
1783	54 3	40 9	6.67		years of peace. Thorold Rogers writes, that the period between 1782 and 1821 was the worst in English history for manual workers, while merchants and manufacturers accumulated fortunes rapidly.

Year	Average Price of Wheat per quarter.		Average Price of Flour per Sack (280 lb.)		Average Price of Bread, per 4lb.	Reigning Monarchs	Events Likely to Influence Prices and Notes.
	s.	d.	s.	d.	d.		
1784	50	4	37	9	7.0		Very severe winter (1784-5).
1785	43	1	32	4	6.6		Cartwright patents Steam Power Loom.
1786	40	0	30	0	5.52		
1787	42	5	31	10	6.0		
1788	46	4	34	9	6.0		French Revolution began.
1789	52	9	39	7	7.14		
1790	54	9	41	1	6.67		
1791	48	7	36	6	6.0		French Revolution and great unrest
1792	40	3	30	3	6.67		Beginning of Napoleonic Wars.
1793	49	3	37	0	6.67		
1794	52	3	39	3	6.67		Very deficient Harvest.
1795	75	2	56	5	11.28		New Bread Act setting Assize
1796	78	7	59	0	8.06		table by wheat or by flour prices. Allowance to bakers raised to 14s. per qr. of wheat.
1797	53	9	40	1	8.51		Panic because of suspension of gold, and notes made legal tender
1798	51	10	38	11	7.4		Union of Ireland (1800).
1799	69	0	51	9	12.0		Population of Great Britain
1800	113	10	85	5	14.09		16,000,000 (1801).
1801	119	6	89	8	14.27		From 1801 to 1815 was the period
1802	69	10	52	5	8.75		of the Great French War. There
1803	58	10	44	2	8.01		was a succession of bad harvests :
1804	62	3	46	9	9.0		land was badly cultivated, and,
1805	89	9	67	4	12.13		through stormy weather and attacks by the French at sea, relief supplies from abroad could not be obtained.
1806	79	1	59	4	10.77		Battle of Trafalgar (1806).
1807	75	4	56	6	10.0		
1808	81	4	61	0	10.68		
1809	97	4	73	0	12.6		
1810	106	5	79	10	13.17		
1811	95	3	71	6	13.0		
1812	126	6	94	11	16.0		Very severe winter, 1812. "Allow-
1813	109	9	82	4	14.46		ance" to bakers at this time
1814	74	4	55	9	10.5		was 16s. 9d. per qr. of wheat.
1815	65	7	49	3	9.5		Abolition of Assize of Bread Laws.
1816	78	6	58	11	10.8		From 1815 to 1845, in which

Year	Average Price of Wheat per quarter	Average Price of Flour per Sack (280 lb.)	Average price of Bread per 4lb	Reigning Monarchs	Events Likely to Influence Prices and Notes.
	s. d.	s. d.	d.		
1817	96 11	72 9	13.16		period the average price of wheat
1818	86 3	62 9	10.86		was 61s. 2d. or 23s. per quarter
1819	74 6	55 11	9.5	George	lower than that for the previous
1820	67 10	50 8	9.4	IV. 1820	15 years there were graduated
1821	56 1	42 1	8.5	to 1830	duties levied on imported corn. The Corn Law of 1815 prohibited the delivery for home consumption of Colonial wheat when quarterly average price of British wheat was below 69s. 1⅛d. per Imperial quarter and prohibited Foreign wheat when the price was below 82s. 6d. At or above those prices Colonial and Foreign wheats were admitted duty free. Population of Great Britain 21,272,000 (1821).
1822	44 7	33 6	7.6		Present London Bread Act passed
1823	53 4	40 0	9.0		(1822).
1824	63 11	48 0	10.4		
1825	68 6	51 5	10.8		
1826	58 8	44 0	9.2		
1827	58 6	43 11	8.9		
1828	60 5	45 4	10.2		
1829	66 3	49 9	11.0	William	
1830	64 3	48 3	10.5	IV. 1830	
1831	66 4	49 9	10.4	to 1837	Population of Great Britain
1832	58 8	44 0	9.6		24,392,485 (1831).
1833	52 11	39 9	8.7		
1834	46 2	34 8	8.0		
1835	39 4	29 6	7.0		
1836	48 6	36 5	8.0	Victoria	Bread Act passed for Provincial Eng-
1837	55 10	41 11	8.5	1837 to	land, Wales and Scotland (1836).
1838	64 7	48 6	10.0	1901	Bread Act for Ireland passed
1839	70 8	53 0	10.0		(1838).
1840	66 4	49 9	10.0		
1841	64 4	48 3	9.0		Population of Great Britain
1842	57 3	43 0	9.5		27,057,923 (1841).
1843	50 1	37 7	7.5		
1844	51 3	38 6	8.5		
1845	50 1	37 7	7.5		From 1845 to 1873 the average
1846	54 8	41 0	8.5		price of wheat was 53s. 2d. Al-

Year	Average Price of Wheat per quarter	Average Price of Flour per Sack (280 lb.)	Average Price of Bread per 4lb	Reigning Monarchs	Events Likely to Influence Prices and Notes.
	s. d.	s. d.	d.		
1847	69 9	52 4	11.5		though farmers had not the protection of import duties there was comparatively little foreign competition. Thickly-populated countries had little to export and virgin soils not yet developed. Corn duties supended for 13 months to 1847.
1848	50 6	37 11	7.5		
1849	44 3	33 3	7.0		
1850	40 3	30 3	6.8		
1851	38 6	28 11	6.8		Population of Great Britain 27,745,949 (1851).
1852	40 9	30 7	6.8		
*1853	52 3	49 3	8.3		From 1st Feb., 1849, to 31st Aug. 1864, the duty on imported corn war fixed at 1s. per qr.
1854	72 5	54 4	10.5		
1855	74 8	56 0	10.8		
1856	69 2	51 11	10.8		
1857	56 4	42 3	9.0		
1858	44 2	33 2	7.5		
1859	43 9	32 10	7.8		
1860	53 3	40 0	8.8		
1861	55 4	41 6	9.0		Population of Great Britain 29,321,288 (1861).
1862	55 5	41 7	8.5		
1863	44 9	33 7	7.5		
1864	40 2	30 2	7.0		From 1st Sept., 1864, to 31st May, 1869, duty fixed on wheat at 3d. per cwt.
1865	41 0	30 9	7.5		
1866	49 11	37 6	8.8		
1867	64 5	48 4	10.3		
1868	63 9	47 10	9.3		
1869	48 2	36 2	7.8		Corn imported duty free from 1st June, 1869, to 14th April, 1902.
1870	46 11	35 3	8.0		Franco-Prussian War 1870-1.
1871	56 8	42 6	9.0		Population of Great Britain 31,845,379 (1871).
1872	57 0	42 9	9.8		
1873	58 8	44 0	8.0		From 1873 up to the present, with slight exception, there have been no import duties on wheat and foreign competition has been wholly free. Immense wheat areas have been opened up in America. India, Australia, etc., induced by cheap transit of pro-
1874	55 9	41 10	7.3		
1875	45 1	33 10	6.8		
1876	46 2	34 8	7.2		
1877	56 9	42 7	8.1		
1878	46 5	34 11	7.5		
1879	43 10	32 11	7.1		
1880	44 4	33 4	7.0		

*Average wheat prices for cereal year 1853-54 of 72/11 as given in notes on Wheat Prices (P. 39) does not compare with average given here which is that for calendar year, the other being for cereal year.

Year	Average Price of Wheat per quarter	Average Price of Flour per sack (280 lb.)	Average Price of Bread per 4lb	Reigning Monarchs	Events Likely to Influence Prices and Notes.
	s. d.	s. d.	d.		duce Indian wheat was not imported in large quantity until after 1878.
1881	45 4	34 0	7.0		Population of Great Britain
1882	45 1	33 10	7.4		35,246,562 (1881).
1883	41 7	31 3	7.0		
1884	35 8	26 9	6.8		
1885	32 10	24 8	6.2		
1886	31 0	23 3	6.3		
1887	32 6	24 5	5.6		
1888	31 10	23 11	5.7		
1889	29 9	22 4	6.0		
1890	31 11	24 0	6.0		
1891	37 0	27 9	6.2		Population of Great Britain
1892	30 3	22 9	6.2		37,880,764 (1891).
1893	26 4	19 9	5.8		
1894	22 10	17 2	5.5		
1895	23 1	17 4	5.1		
1896	26 2	19 8	5.1		
1897	30 2	22 8	5.5		
1898	34 0	28 0	6.0		Great wheat speculation in America. "Corner" attempted by Leiter and others, lasted about three months.
1899	25 8	21 0	5.1		
1900	26 11	22 6	5.2		
1901	26 9	21 6	5.0	Edward VII.	Population of Great Britain 41,609,091 (1901).
1902	28 1	22 6	5.3	1901 to	From 15th April, 1902, to 30th June,
1903	26 9	22 9	5.6	1910	1903, there was a duty on imported
1904	28 4	24 6	5.5		wheat of 3d. per cwt.
1905	29 8	23 9	5.5		
1906	28 3	22 0	5.5		
1907	30 7	26 0	5.4		
1908	32 0	26 6	5.8		
1909	36 11	28 0	6.1		
1910	31 8	26 9	5.9	George	
1911	32 6	25 9	5.5	V. 1910	Population of Great Britain
1912	36 10	26 6	5.8	to 0000	47,365,559 (1911).
1913	32 7	25 6	5.8		
1914	34 8	26 6	5.8		Great War started, Aug. 4th, 1914.
1915	52 8	39 11	8.1		
1916	58 3	50 2	9.4		
*1917	78 0	52 7	10.7		

* Figures are for first six months of year only.

AN APPRECIATION OF THE MAIN FACTORS IN THE RISE OF PRICES AND FREIGHTS (1914—17).

The great war which broke out in the summer of 1914 and has now lasted for over three years, without any immediate prospect of peace, has naturally had the effect of raising the price of wheat to a level it had not reached since the Napoleonic wars, though it must be admitted that the very highest figures touched by the premier cereal in that war-troubled period have not yet been reached, or even approached. The wheat charts that have been published by one statistical authority or another give 120s. as the price made by the quarter of wheat in this country in 1812, while that high figure, or very near it, was reached twelve years earlier. As a matter of fact this price of 120s. must stand as a general average for the whole of the Kingdom, or perhaps for England and Wales. It is certain that much more than 120s. was realised for wheat in certain months of 1812. In the annual statement for 1812 by Titus Woolhead, a diligent compiler in his day, of statistics, relating to the price of wheat, flour and bread in London and its neighbourhood, it is recorded that in January of that year wheat touched at its highest point 136s., while in March 142s was made and 152s. in April. The maximum was reached in October with 172s., but 170s. had been made in the previous July. These were prices actually made in the open market, but such were the fluctuations on the corn exchanges of that day that simultaneously with these swollen figures much more moderate prices were accepted now and again. As an example of the extreme irregularity of the market in those days Woolhead records 100s. as the lowest price in the July of 1812, when 170s. was the top figure; in September 100s. was the lowest price as against 168s., the highest figure, and in the following month a maximum of 172s. was balanced by a minimum of 76s. The average for that month dropped to 115s. 0¼d., but the monthly averages in that year (for London) of 142s. 0¼d. and 139s.4½d. for July and August respectively justify the prices of 1s. 8d. per quartern of bread set by the Civic Authorities in those months of that year. The highest

price for bread in the Assize of 1812 was 1s. 8¼d. in the first week of October. The lowest bread price recorded was 1s. 3½d. early in February. The weekly average for 1812 was a fraction over 1s. 6½d. which compares with 1s. 3d., the weekly average of London's Assize for 1811. If I have gone so minutely into these figures of the Napoleonic era, it is because it seems not undesirable to compare the prices reached since the outbreak of this world-wide war with those that obtained in Georgian England during the utmost stress of the conflict with Napoleon. It is as well to bear in mind that the population of the United Kingdom during those strenuous days of the reign of George III. was about 16,000,000, the whole of whose breadstuffs supplies had practically to be found within the British Isles. Between 1800 and 1818 the price of wheat fluctuated between 86s. and 120s., that is, striking a rough average for the whole Kingdom. To-day, under the strain and stress of a war which has taxed and is taxing the resources of the British Empire to the utmost, wheat advanced in thirty-four months from the outbreak of hostilities from about 32s. to 87s. 6d., taking the highest price of wheat as sold by the Wheat Commission. While more than three-fourths of the breadstuffs supply required to feed 47,000,000 people is imported, the control of this supply, so far as wheat is concerned, had been vested in the hands of the State since October, 1916. The reasons that led the Government to undertake this onerous charge will presently be duly set forth. Suffice it to say that the nationalisation, as this war measure may be termed, of the external wheat trade of the United Kingdom, has so far been justified by results, that it has probably given millers cheaper wheat than would have been obtainable had the trade been left in private hands. It may be noted that native wheat, which had been left in the hands of traders, appreciated very rapidly in the winter and spring of 1917, when the farmers were enabled by cold drying winds, to get their stacks threshed out in January and February. At the close of March, 1917, English wheat had reached, in many provincial markets, from 88s. to 90s. Higher prices than these have been quoted, and were probably made, but the conditions were doubtless more or less abnormal. As much as 100s. was reported to have been made in a Southern market, at the end of March, but if such a figure was realised it was probably paid for wheat intended for seeding in April, and was essentially a fancy price. It is a fact, that in the third year of the great war "controlled," that is imported wheat, was being sold to millers at an average of 79s. to 80s., while

the native article had reached 90s. The former had appreciated from the outbreak of war about 150 per cent., while the latter had made an advance of nearly 200 per cent.* If it were asked what had impelled the authorities to allow a free hand to the British farmer, while placing imported wheat under State control, the answer would be that in this time of war it seemed imperative to give the British wheat grower every inducement to put as much land under that cereal as his resources permitted.

After this brief view of the stringency in wheat markets in the earlier years of the past century it will not be without interest to watch the rise and fall of wheat prices in those Victorian days when the nineteenth century had sped on a little more than half its course. Those were the days of the Crimean War, which dragged on for about two and a half years. The population of the United Kingdom had then more than doubled the early nineteenth century mark. In 1847 and 1848, two years respectively marked by the disasters of the Irish Famine and a very bad harvest in this country, the price of English wheat rose to between 69s. and 70s. Those calamites sealed the fate, or perhaps it would be more correct to say sounded the death knell, of the protective duties on wheat and flour, popularly known as the Corn Laws. After a bitter struggle maintained for many years, the party of progress finally triumphed in 1846 when Sir Robert Peel carried the repeal of the Corn Laws, though in deference to the powerful landed interest this beneficent measure did not take effect till 1849. The protective system abolished by Sir Robert Peel was replaced by a so-called registration duty of 1s. per quarter, which continued in force for twenty years, till abolished by Robert Lowe, then Chancellor of the Exchequer, in 1869. This duty was revived by Sir Michael Hicks-Beach, in his 1902 Budget, to help to pay for the South African War, but was abolished by his successor, Mr. Ritchie, in the following year. But that is another story. There was an interval of relatively low corn averages, from the passing away of the Corn Laws till the Crimean War, which had the effect of cutting off our imports of Russian wheat and brought back, for a while, high prices. In 1849 English wheat fell as low as 44s., and in 1850 it dropped down to 39s., recovering a couple of shillings by the following year. The average "Gazette" price

*Though English Wheat at the outbreak of war was 35s., yet this price was the result largely of the scarcity inevitable at the end of season. For the latter half of the season 30s. to 31s, would have been a fair price, averaging all qualities.

for English wheat in the cereal year, 1852-53—not the calendar year—was but 44s. 7d. At that time the population of the United Kingdom was about 27,500,000, while our total consumption of wheaten breadstuffs in the twelve months in question, was estimated at 16,335,464 qrs. Deducting our net home production (less 2½ bushels per acre for seed), namely 10,433,464 qrs., we get a total importation in that year of 5,902,000 qrs. of raw wheat or of wheat in the shape of flour. A great change from the Napoleonic era, when our bread stuffs imports were a negligible factor. The downward tendency of wheat prices was sharply arrested by the outbreak of the Crimean War in 1853. The wheat average for the 1853-4 cereal year was no less than 72s. 11d., an advance on its immediate predecessor of 28s. 4d. This sharp rise was due not only to the loss of our Russian wheat supplies, but also to a bad harvest. For some reason or another our wheat area had diminished by 44,678 acres from the acreage of 1852-3, while the yield was exceedingly poor, but 20⅞ bushels to the acre. The total available home produce was only 9,337,546 qrs. leaving a deficit, as against the previous year of 1,095,918 qrs. It is not surprising that the imports for that cereal year reached 6,092,000 qrs. an advance of 190,000 qrs. on the previous season. But even so, the total available supply for a population of 27,619,999 was short of the stocks in the preceding cereal year by just 905,918 qrs. These figures are very interesting, as they clearly show how the smallest shortage will artificially enhance prices. In dealing presently with the advance of breadstuffs under the pressure of this, the greatest war in which Britain has ever been engaged, we shall have occasion to show how markets can soar upwards in the midst of plentiful supplies, under the mere fear of scarcity at a later but indefinite date. It is not surprising then that, under the conditions existing at the outbreak of the war with Russia in 1853, wheat should have taken an upward lift, which may roughly be expressed as 64 per cent. Right through the Crimean period wheat maintained this relatively high level. The average for the cereal year 1854-5 fell, indeed, 2s. 10d. but this fall was made up and more, in the following year (1855-6), when the British corn average stood at 73s. 11d., the highest point in the annals of the nineteenth century, always excepting the Napoleonic era. The history of these two latter cereal years of the Crimean period (1854-5 and 1855-6) is full of interest to the student of economics. The protectionist school is never tired of repeating that the assurance of high prices is bound to stimulate

production, and that the country which desires to safeguard its bread supply has only to put a high import duty on wheat, to see the wheat area at once expand by leaps and bounds. Now, admitting that the import duty of one shilling per quarter was not in the days of 50s., 60s., and 70s. wheat much of a protection against oversea imports, it is still undeniable that the British farmer in the Crimean period had every inducement to increase his wheat acreage. In addition to a very tempting rise in price—an advance of about 60 per cent. would in any country be hailed as a godsend by the producers of any staple article—the British agriculturist of that day was effectively protected against foreign competition by the elimination of our then chief source of foreign supply, Russia to wit, to say nothing of the then primitive method of ocean transport. Steam navigation was still in its infancy; the day of 12 to 15,000 tonners equipped with room-saving triple expansion engines had not yet dawned. The wheat area in the 1853-4 season was indeed increased to a small extent as compared with its predecessor, the advance being a trifle over $\frac{1}{2}$ per cent. Fortunately for the wheat growers of those days the season was as propitious to wheat culture as the previous cereal year was the reverse. Instead of the miserable yield of $20\frac{7}{8}$ bushels to the acre, the very high figure of $34\frac{3}{4}$ bushels was attained, which gave a net yield of 16,427,742 qrs., or 7,090,196 qrs. in excess of the total net yield of the previous year, and 998,196 qrs. above the total available supplies of the previous season. In other words, the British farmer had produced in this season, thanks to the bounty of nature, nearly a million quarters over and above the previous total available home harvest plus more than six million quarters of imported bread stuffs in the previous season. The imports in this bounteous cereal year dropped to 2,983,000 qrs., which, added to the home crop, gave a population of rather over 27,750,000 a total supply of 19,410,742 qrs. Yet the price of wheat gave way but slightly—a drop of about 4 per cent. What clearer proof could be furnished that, when war's alarms have seized on any land, there is a strong tendency on the part of producers to charge exorbitant prices even in the midst of plenty. The following year there was a further increase in the wheat area, the natural result of high prices and a successful season in the 1854-55 cereal year. There was an extension of the wheat area of nearly 40,000 acres, which gave the United Kingdom in that season a total wheat acreage of 4,076,447 acres. But this season, though not exactly bad for the farmer, did not favour

wheat as did its predecessor, and with a yield of only 27⅞ bushels the total net yield was but 12,776,300 qrs., which with the imported 3,265,000 quarters gave a population of 27,947,933 a total breadstuffs supply of 16,041,300 quarters. The British corn average rose 3s. 10d. above the 70s. 1d. of the previous season, but dropped 13s. 10d. in the following season (1856-7) under the influence of an increase in the wheat area of 137,204 acres, a fair return in the shape of a net yield of 13,007,453 quarters, not illiberal imports (4,102,584 quarters), and above all a state of peace.

As might have been expected, the price of bread reached a high level during the dear days of the Crimean War. In the City of London as much as 1s. 3d. and 1s. 4d. per quartern was paid for bread; the writer has had those prices quoted to him by bakers who, in those days, had shops in that part of London. It is probable that these prices, which respectively came within 75 and 80 per cent. of the top figures of the Assized bread of 1812, did not last very long, but bread at a shilling was perfectly justified by the then level of wheat. That farmers should have been allowed to exact such figures for the staple food of the land in such a season of plenty as the 1854-5 cereal year, will ever be a blot on the history of those days. It may be urged in defence of the rulers of that time, that that was an age of extreme individualism, in which the right of the individual trader or producer to exploit to the utmost his fellow citizens was admitted without question. We have progressed a little since those days, yet have not advanced very far on the road to State socialism, if we are to judge by the experience of this war. It took about twenty-six months of war to convince the powers that were that the hand of the State, or in other words of the community, should be laid on shipowners' prices and profits. We shall return to this subject in dealing with the causes that led to the "nationalisation" of the British wheat trade in the fall of 1916.

In considering how far the great war which opened at the end of July, 1914, has affected the price of wheat, it is necessary to take a panoramic view, so to speak, of Europe in the summer of that year. Germany, a federated Empire of about 67,000,000 people, occupying a central, and in some respects very advantageous strategical position between Russia and France, having as an ally, one might say vassal,

the military Empire of Austria-Hungary with a population of possibly 50,000,000, suddenly struck at both her neighbours. The ostensible cause of hostilities was the undoubted resentment by Russia of the cavalier treatment by Austria of the Balkan State of Serbia, a small but independent kingdom, with aspirations to the assumption, whenever the time should be ripe, of the mantle of sovereignty of the South Slavonic peoples. It must be borne in mind that from the Adriatic, right away to the Ægean and to the shores of the Black Sea, there have existed at various times during many centuries past a series of kingdoms and principalities, of which the most famous was the realm of Tsar Dushan, that was largely coterminous with the modern kingdom of Serbia, as reconstituted after the Balkan wars of 1912-13. The dream of a Serbian, or South Slavonic Empire, embracing some of the fairest lands of South Eastern Europe, was shattered by the Turks at the Battle of Kossovo, when the army of Tsar Lazar was utterly routed, and that hapless monarch was captured and beheaded. Serbia was for the time being, and for centuries after, under the heel of the Turk, but a few Serbian warriors found refuge on the rocky heights of Montenegro, where they maintained their independence of both Turkey and Austria until their mountain fastness was recently overrun by the Austrian forces in the course of this war. It is not difficult to understand why the modern kingdom of Serbia, with roots stretching deep into the historic past, was an object of the utmost suspicion and dislike in Vienna, which had to consider the dissolvent effect of the new-born Serbian kingdom on her own Slav subjects, Croatians, Slavonians, and others, who share the Serbian blood, though unlike them they profess the Roman and not the Greek form of Christianity. The Greek Church, known by its sectaries in Greece, among Greeks still under Ottoman rule, in Bulgaria, Serbia and Roumania, as the Orthodox Church, is also, or was till the recent Russian revolution, the State Church of Russia. In Russia, however, the words " and Imperial," were added to " Orthodox," signifying that the Russian Church had the special distinction of the patronage of His Imperial Majesty the Tsar and Autocrat of all the Russias, for the moment a fallen idol. The Bulgarians, another South Slavonic people, but whose features bespeak a strain of Tartar blood, though co-religionists of the Serbians, have been more or less jealous rivals of the Serbs. Russia, the patron from time immemorial of the Southern Slavs, in all

their struggles with their former or present masters, such as the Turks, and the Austrians, has never allowed anything in the shape of liberty at home till a partial revolution some dozen years ago created a feeble imitation of a free Parliament which received the title of Duma. The revolution in March last certainly brought a free State into being, and for the time being swept autocracy into the dust. That the ruthless oppressor of Poland and the organiser of massacres of helpless and unoffending Jews should have posed as the would-be liberator of her brother Slavs from the Austrian yoke, is one of the grimmest jests recorded in history. The Austrian Empire, to which is joined the kingdom of Hungary, is a military State of a rather antiquated type, but its diverse and to some extent mutually antagonistic nationalities are in the enjoyment of local autonomous Government. After this survey of the conditions obtaining in Southern Eastern Europe, in Austria-Hungary and in Russia, it will be quite easy to understand how completely Germany had Austria under her thumb. It was the fear of Russia that forced the late Emperor Francis Joseph to do the absolute bidding of Germany. Italy, on the other hand, though a member of the tripartite treaty which bound Germany, Austria-Hungary and Italy to mutual defence in case the territories of any one of those States were attacked by any Power, had long cherished ambitions on the so-called Trentino, that part of Southern Austria which contains an Italian-speaking population ; moreover, Italy coveted a dominating position on the Adriatic littoral. When Austria, therefore, presented a note to Serbia, practically demanding that the latter should, as penance for her alleged complicity in the murder at Serajevo, in June, 1914, of the Heir to the Austrian Empire, surrender her independence, and become Austria's vassal, the Dual Empire placed itself technically in the position of a disturber of the peace. Italy used this fact as a valid reason for refusing to march with her Allies against France and Russia, but from that moment began to arm with the intention of entering the lists against her former ally as soon as her military preparations should be complete. France, the age-long foe of Germany, had her ravished provinces of Alsace and Lorraine to recover.

In this war Germany was the aggressor, and happily for France, her unscrupulous violation of the soil of Belgium, of which the neutrality had been guaranteed by several European Powers, not forgetting Prussia herself, brought this country into the fray. We could do no other than

honour our signature to the piece of paper binding us to defend the neutrality of Belgium. Nevertheless the entry of this country into the great war, on Tuesday, August 4th, 1914 came as a great shock to the people of this country. Nor could it have been otherwise. While talk of the great European war that would break on the world some day or another had been going on for more years than most of us care to remember, yet not one business man in ten thousand ever dreamed that war would be forced upon the world, because of the consuming ambition of Kaiser Wilhelm, who only crystallised however in his own person the ambitions of nine-tenths of the German people to possess the earth. We are an insular folk, full of all the defects of insularity, with an ower guid conceit of oursels, and it had never entered our heads that the Germans, of all people in the world, would ever challenge us for the world's supremacy. It is true that for years the intentions of Germany in this respect had been freely advertised in the writings of the militarist German school. But few of us either talk or read German. The only Germans that the stay-at-home Briton had ever seen were either waiters or barbers, who no doubt struck him as a somewhat feeble folk. Few of us dreamed that the German Empire was a vast entrenched camp, with the largest population of any European country (Russia excepted) trained to arms, a land of vast material resources, with an immense productive capacity as far as the outturn of arms, munitions and ships is concerned, and above all, a land capable of living on its own resources, at least for a considerable time. Deaf and blind to what was passing a few hours journey from our shores, we offered our jealous and vigilant rivals the edifying spectacle of a house divided against itself. After Parliament had solemnly ratified the grant of Home Rule to Ireland, a small but militant faction deliberately expressed its intention to rebel against the authority of Parliament and to seek to upset its decisions by force of arms. These well-advertised rebels even went to the length of importing arms from Germany. Is it wonderful that the Kaiser and his ministers should have come to the conclusion that the German Divinity, whom the former is so fond of quoting, had at last delivered their British foes into their hands. The prospect of civil war in Ireland undoubtedly helped not a little to precipitate Europe into war.

The unexpected and unknown has always special terrors. The man in the street, and on the market, was taken completely by surprise. The

declaration of war against Germany, came, it will be remembered in the form of a verbal statement by our Ambassador at Berlin to the Chancellor of the German Empire that in the event of any attack on Belgium his realm might consider itself at war with this country as from the night of August 4th. It may be noted that the first serious warning that Europe might suddenly find itself landed in a wide reaching war had been sounded on Monday, July 27th. It was rumoured on that day that Austria had presented an ultimatum to Serbia, which might contain the seeds of war. But British merchants are not publicists, and though sellers of Manitoba wheat asked for an advance of 1s. to 1s. 6d. c.i.f. on No. 1 Northern for August shipment on the strength of the gathering clouds on the European horizon, buyers at the advance were not very easy to find. The Exchange did not yet believe in war. It should be noted however that the market, after remaining in a quiescent state for about six months, had begun to harden towards the middle and end of July. That was due to the prevalence of unfavourable reports concerning the Russian and Roumanian crops. In the Russian spring wheat districts drought and parching hot winds had done mischief, while the winter wheat harvest was being delayed by heavy rains. The Roumanian harvest was threatened by excessive moisture. In normal times Russia is a liberal exporter of wheat, and this news had a bullish effect on a market which had been in a bearish mood for fully six months. A sharper edge was put on the Russian and Roumanian reports by the knowledge that Hungary had a short crop, and would need to import between 3,000,000 and 4,000,000 qrs., while much the same conditions were reported from Italy. Then France, an enormous consumer of bread, was known to be likely to need imports during the coming cereal year of 8,000,000 to possibly 10,000,000 qrs. This would have created in July, 1914, an extremely bullish situation but for the remarkably weak statistical position of wheat in the United States, which had secured a record winter wheat crop, that must have exceeded 80,000,000 qrs., at an unusually early period in the season, and had harvested it in very good condition. The prospects for the American spring wheat crop were also good, while the Canadian outlook for spring wheat, if a trifle chequered, owing to drought in parts of Southern Alberta and South Saskatchewan, was not unfavourable in the main. With regard to the American winter wheat crop, which as already remarked had beaten all records, millions of quarters are said to have been sold for shipment early in July; a good deal of this

wheat had found purchasers in Germany. It is easy to see from this summary of crop conditions in Europe and North America in July, 1914, that on the eve of the outbreak of the great war, the statistical position of wheat, if not exactly bullish, was still distinctly strong owing to the comparative failure of the wheat crops in several important Europeans lands. Of course this survey has left out of account the lands of the Southern Hemisphere including Argentina, Australia and India, which in good seasons are not unimportant exporters of wheat to the importing lands of Europe. The Argentine harvest is gathered normally in November and December, the very earliest districts beginning about the middle of November, while the Australian crops should be got in during the same period. The Indian wheat harvest commences in the earliest ripening parts of the Peninsula in February and extends, over a vast area, well into April. The shipping of Argentine wheat may in a good season commence in January, while the same is true of Australian wheat, but the latter has further to travel before reaching our shores; March for Argentine, and April for Australian wheats are approximate dates of first arrivals in this country. Indian wheat reaches our ports in June and July. It may be noted that, fortunately for this country, the British crop in 1914 turned out very well, giving a yield of about 8,000,000 qrs., of which fully 95 per cent was sound milling wheat. The first mutterings of the European storm fell in Mark Lane, as we have seen, on somewhat deaf ears. The idea that all Europe was to be convulsed in war because Austria had presented an ultimatum to the little state of Serbia, seemed preposterous. As a matter of fact the American option markets took serious alarm before the Corn Exchanges of Europe, Chicago rising $8\frac{1}{4}$ to $9\frac{1}{4}$ cents. equal to 2s. 9d. to 3s. 1d. per qr. of 480 lbs. as soon as the presentation of the ultimatum became public property. By Wednesday, July 29th, Mark Lane, influenced to some extent no doubt by the sharp advance in America, began to move upwards. On that day the shilling rise in c.i.f. wheat was quickly advanced to 3s., while oversea flour, which had been hard to move on Monday, now ran up several shillings. The excitement was intensified on the following day though, this not being a market day in Mark Lane, prices had less scope for advance. But by Friday, July 31st, the European horizon looked black indeed, and the upward current of the previous Wednesday had developed into a whirlwind which sent wheat, flour and coarse grains prices flying into the sky. The advance in c.i.f. wheat from the previous Friday, July 24th, was quite

7s. to 8s. For parcels of No. 1 Northern Manitoba, needy buyers were giving as much as 45s. in the ex-quay and also in the ex-ship position. In this time of wild excitement the normal distinctions between one position and another were obliterated.

It is remarkable how in times of great excitement, when men's nerves are on the rack, the firm willed are apt to be steeled in resolve while those of the softer mould become still more yielding. On this and other days during the short period of distraction that followed the outbreak of war a difference of as much as 2s. was observed between the price paid on the same day for the same article. Saturday, August 1, and Sunday, August 2, provided two days of much needed rest for jaded nerves. Then came Monday, August 3, which, as a Bank Holiday, should have been free from business. But the Baltic, the greatest grain market and shipping exchange in Europe, was kept open, though no business was transacted, and though Mark Lane Exchange was closed, yet the Subscription Room was open for the first time in its history, so far as Bank Holidays are concerned. On the afternoon of that day Sir Edward Grey, as he was then, let the House of Commons know war with Germany was inevitable. Our Ambassador in Berlin had been instructed to let the Chancellor of the German Empire know, frankly and unreservedly, that if the neutrality of Belgium were infringed, Germany might consider herself at war with us as from midnight, Tuesday, August 4, By Wednesday, August 5, the die had been cast, but this fact instead of stilling the excitement in the market, increased it. The reason for this was because the United Kingdom, being dependent on sea-borne breadstuffs and coarse grains for an overwhelming proportion of its needed supplies, panic reigned as to what might happen if the Navy were to prove unequal to the task of keeping the seas clear for our world-wide commerce, This panic was a poor compliment to our incomparable Navy, but panic is the only word which will adequately describe the situation in the grain trade during the first fortnight after the war broke out, not that the panic was confined to the markets. From one end of the country to the other many people took alarm at the idea of short commons in the event of the British Isles being effectively blockaded, and for ten days of so, rich and poor were besieging provision shops with the idea of laying in stocks against the evil days that were supposed to be in store. On country roads motor cars stopped at mill doors to know if there was any flour for sale, carrying

off as many bags as the miller would part with, and the car could accommodate. One country miller disposed in this way of five sacks to a party of "food hogs," as these panic-stricken foragers were appropriately christened, at 60s. per sack, a price 150 per cent. in advance of the figure he would have been pleased to accept ten days before. A miller in the neigbourhood of the Metropolis, with a somewhat keen sense of public duty, gave strict orders that but one sack should be sold to any private customer, who had to show that he was the head of a family; a sack was supposed to represent a year's consumption of flour for one household. The price was fixed at 40s. A Metropolitan miller was rung up one morning by an unknown voice, and was asked to quote for his top Patent. The quotation delivered, an order for ten sacks was promptly given, with the intimation that a cheque for the amount would be forthcoming on immediately delivery at a given West End address. The order was executed, when it was found that the new customer was a wealthy stockbroker.

A few days later the ten sacks were resold in Mark Lane. These little incidents, which might be mulitplied a hundredfold, will give some idea of the extreme tension which prevailed throughout the country for a full fortnight after the outbreak of war hostilities. One lion in the path of the importer was the exorbitant figure asked for marine insurance, or, to be accurate, the extraordinary premium demanded by underwriters for covering the war risk. The Government of that day must be given due credit for grasping this nettle quickly and firmly. A way out of this difficulty was found by the State undertaking to reinsure all marine war risks to the extent of 80 per cent. This restored confidence to the marine insurance market, as is proved by the fact that within about five weeks of the opening of the National Insurance Bureau the war risk dropped from five guineas per cent. to anywhere between three guineas and 20s. or less. At that time the submarine peril had not developed, and was considered almost negligible, though in certain oceans the presence of German cruisers was the cause of much uneasiness. The exploits will long be remembered of the "Emden," a swift armoured cruiser that escaped from the harbour of Kiauchau, in China, and destroyed four million pounds worth of British property before it was brought to book at Cocos Islands, on November 11th, 1914. During the meteoric career of that modern imitator of the "Alabama" the rate of insurance in

the Indian Ocean was about three guineas per cent. But simultaneously the rate on the well policed North Atlantic route was but 7s. 6d. per cent. and for a brief while fell, if we mistake not, to 5s. per cent. From 7s. 6d. however, it jumped one fine morning to 15s. per cent., when news came through that mines had been mysteriously laid off the Irish Coast, with the result that the Manchester Commerce was lost and some other vessels placed in great peril. Since then the war risk has fluctuated, reaching somewhere about 20s. per cent. at or about the time that the first submarine campaign was inaugurated by the Germans in February, 1915. The rate went up and down in about even ratio to the deadly effect of the submarines, or to the degree of success achieved by our Admiralty in coping with this special danger of the seas. Towards the middle of 1915 it seemed as if the British Navy had solved this arduous problem, but as fast as her U boats were destroyed Germany built others, ever endeavouring to improve on the original design, and certainly succeeded in making larger and apparently more seaworthy vessels, which can not only carry more torpedoes but also more guns and especially shells. It must not be left out of sight that the success of the submarine campaign, such as it has been, regarded as an agent for the destruction of oversea supplies of food, munitions and raw materials to this country and its allies, has been achieved not so much through the use of torpedoes, as of shells—on unarmed vessels. One story of an armed mail boat's encounter with a U boat on the route between the New World and this country will abundantly illustrate this point. Suddenly a periscope appeared, and a torpedo was almost simultaneously launched against the liner, but missed its mark. Promptly the gunner fired at the periscope, though without success, as about half an hour later the periscope, with this time a portion of the submarine's conning tower, reappeared above the water and like a flash of lightning a torpedo came for the ship, but again missed its mark. As soon as the conning tower was seen a shell was aimed at it, which may or may not have gone home. Certain it is that the visible portions of the U boat disappeared with remarkable celerity, and were seen no more by the mail boat's crew or passengers. Whatever happened to that submarine it is clear that, without its gun, the mail boat would have been doomed, as the U boat could have knocked it to pieces at leisure with its shells. As it was the submarine wasted two torpedoes, for which storage room on the biggest submarine is limited. The so-called "sharpening" of the submarine campaign in February, 1917, just two years after the

inauguration of practically an unrestricted submarine campaign on all vessels bound for, or having cleared from, a British or Allied port was merely a question of degree. There is no doubt that the German Admiralty had been building a number of U boats for launching all at once with the idea of destroying enough British, Allied and Neutral shipping at one fell swoop to scare away tonnage from our ports, and in this way to strangle us. The scheme was a failure so far as its main purpose was concerned. The British hold on the enemy had not up to the middle of June been thereby relaxed in the least, while the weekly arrivals and clearances averaged roughly 4,700 per week. The number of British vessels of 1,600 tons (gross), or over, sunk by mine and submarine each week ran from 17 to 19, though those figures, in the absence of the actual tonnage destroyed, were not very illuminating. From the middle of April the campaign increased in intensity, but again yielded to the British counter offensive. The number of vessels under 1,600 tons sunk each week varied somewhat, but was not infrequently as high as 9 or 10. As far as the writer is aware, the percentage of boats carrying either wheat, other grain or flour that have been sunk during the whole U boat campaign is insignificant compared with the immense quantities of foodstuffs and coarse grains that have been brought to our shores from all parts of the world. In the month of April, 1917, unless rumour was an unusually lying jade, the chief ports of the United Kingdom were full of wheat. Of course, the Wheat Commission and the Food Controller could say with some reason, that while the state of stocks might be considered satisfactory for the time being no one could guarantee that the submarine peril, already sufficiently formidable, might not grow still more dangerous in the days lying right ahead of us, when the weather was likely to be more settled and therefore more favourable to the submarines, which would also have an advantage in the longer days and shorter nights. It might also be urged that with the poor native crop gathered in 1916, probably not much, if at all in excess of 7,000,000 qrs., of which a very sensible proportion was of inferior milling quality, and with bad prospects for the 1917 crop, due to bad weather in the fall of 1916 and the spring of 1917, the utmost economy in breadstuffs was incumbent on the people of these islands. The serious nature of the submarine campaign arose not so much out of the actual depredations of the U boats as out of the anomalous position in which we, an essentially insular nation, have been placed by the necessities of this war. Bismarck once said, in referring to war threatening between this country and

Russia that such a war would be like a fight between a whale and an elephant. There was this truth in that cynical remark, because Great Britain, the Island Kingdom, with an oversea Empire as wide as the globe, cannot live except by an all powerful navy and an immense merchant fleet. Had we not been compelled to tie up the bulk of our merchant tonnage as troopships, tenders to our vessels of war, hospital ships and carriers of all sorts of warlike stores, the German submarine campaign would have had much less significance.

In the autumn of 1916, Mr. Arthur Balfour, then First Lord of the Admiralty, admitted in Parliament that over 50 per cent. of our merchant marine had been taken by the Admiralty for war work, while another 10 per cent. that had been alloted to our Allies, France and Italy, as it was understood. The proportion of our merchant ships immobilised for their proper work, is only too likely to have increased since then. Asked in the House of Commons in September, 1916, what proportion of the British mercantile fleet had fallen victims to submarines and mines, an Admiralty official replied that this loss, from the beginning of the war stood at approximately 3 per cent. A reassuring statement, in a way but those figures represented losses as balanced by gains, in shipbuilding, and possibly from captures from the enemy. Whatever the reason, certain it is that our merchant ship construction has not kept pace with our needs for fresh shipping. The world wide campaign in which we are engaged and the whirligigs of politics have led us into oversea campaigns in Salonika, in Palestine, in Mesopotamia, which have made, especially as regards the first and the last, very heavy demands on our tonnage. The abortive but very costly Dardanelles expedition, which lasted about twelve months, and convulsed the corn markets of Europe and America, being finally abandoned in December, 1915, tied up a great deal of valuable tonnage that might have been more advantageously employed. Owing to the ever-increasing needs of our army in France and elsewhere, the amount of tonnage monopolised for military or naval purposes, is ever on the increase and it is not surprising that the latest phases, at the time of writing these lines, should have sent the war risk, even on the Atlantic, up to three guineas per cent. The shipping problem has in a sense been the key to the position in the corn market throughout the war. We have seen how, on the outbreak of war, the war risk threatened to place maritime

insurance absolutely out of the corn merchant's reach, and we also know how this danger was conjured away. But that was not the only thorn in the path of the wheat or flour importer. The moratorium, a well conceived measure in many respects, which helped not a little to avert a threatening financial panic, had not a good effect on our import trade. It was in force till October, 1916, but long after then the credit of British merchants was sorely impaired in the United States and, to some extent, even in Canada. It seems far-fetched, but nevertheless it is absoutely true, that the banks on the other side of the Atlantic refused point blank for a time to negotiate the bills needed for carrying American wheat and flour to our side. The American financiers said, in effect, "If you cannot trust yourselves why should you ask us to trust you?" A British corn merchant said in the troubled days of September, 1914, and with some truth, "To get wheat here I have to export gold across the Atlantic. Gradually some confidence was restored, but right through the war business with the United States was largely being done on "ready money basis," though ostensibly c.i.f. terms. That is to say, the consignee, instead of getting about two months credit as was the case before the war, had to pay for his goods, either by a sight draft, or by a three days bill of exchange which, with the three days of grace, meant cash in six days. No review of the breadstuffs markets during the great war would be complete, however summary, without some reference to the great disproportion between the prices of wheat and flour and the actual supplies, either on spot or in sight. We have seen how the prices of wheat and flour soared into the sky on the outbreak of war. Those figures, though exaggerated, are intelligible enough, because at that crisis, and for some weeks longer, no one knew whether the wheat or flour, or maize, or barley, or oats, he had bought overseas, and probably paid for, would ever arrive. But when things had settled down somewhat, owing to the assumption by the State of the bulk of the war risk in maritime insurance, and wheat began to enter our ports freely, the level of wheat still continued very high as judged by the pre-war standard, and the general statistical position. From the week ending July 31st to September 4th, 1914, arrivals of wheat in the Port of London were no less than 943,125 qrs., or at the rate of 157,167 qrs. per week. Moreover wheat receipts in this port continued on the same huge scale right into November, with the exception of one week in September and two weeks in October when the arrivals were more moderate. Such supplies in time of peace would, in corn merchants'

speech, have knocked the bottom out of the market. It should of course not be left out of sight that when the war broke out British millers, all the Kingdom over, were badly found in wheat, the natural effect of slack purchases during the preceding six months, or more.

It so happened that the sale of bread had been distinctly slow though all this period, a phase of the bread trade attributed by bakers to the general prosperity, that is to good wages and low-priced meat. Whatever the actual cause of the poor demand for bread in the first six months of 1914, the effect of stale bread on bakers' shelves could only be to take the edge of demand off flour, and further to render bakers less keen on taking in the deliveries due to them on contracts. It is easy to understand, therefore, that even when wheat began to arrive freely in our ports, millers should have proved themselves eager bidders for it, and so have helped to keep up prices beyond the level that its great abundance would have indicated as justified. It should be mentioned that this abnormal plenty of wheat was partly due to the many captures by British cruisers in the Atlantic of vessels loaded with winter wheat bought by German firms, and consigned to enemy ports. The price of No. 1 Northern Manitoba on August 10th, on ex-quay terms, was 50s. per quarter of 496 lb. The value of old-crop English delivered up in London on that day was about 48s. to 50s. per quarter of 504 lb.; in the country a little new wheat was sold on rail at 45s. The "Gazette" average for English wheat for the preceding week was 34s. 9d., the apparent discrepancy between the figures being due doubtless to the presence of chicken and inferior wheat; allowance must also be made for the statutory quarter; this is 480 lbs. as compared with 504 lb., which may be called the standard farmer's quarter. By September 28th, the ex-quay price of No. 1 Northern Manitoba wheat was about 48s., while English wheat had slipped down to about 40s. to 41s. delivered up. The relatively high price of No. 1 Manitoba was partly due to the scarcity of No. 1 as compared with the lower grades. If we take the Liverpool markets during the last six months of 1914, we shall find that the average monthly price of No. 2 Hard Winter, based on two market days per week rose from 34s. 9d. in July to 46s. 9d. in December, without a single break, an advance of 12s. per quarter, that was certainly not due to any shortage of supply. It must not be left out of sight, of course, that the closing of the Dardanelles in the autumn of 1914, through the

entry of the Turks into the war on the side of the Central Empires, seriously complicated the position of supply and demand to this extent, that whereas Russia had been deemed good for an exportable surplus of at least 12,000,000 to a possible 20,000,000 quarters, and had normally been a ready source of supply to such Mediterranean lands as Greece, Italy, Spain and Portugal, those countries were now thrown back on North America and Argentina. This created a peculiar and somewhat embarrassing situation for British corn merchants. They found themselves in sharp competition at New York, and at Buenos Ayres as well, with agents of the above-mentioned European Governments, who were bidding up wheat for all it was worth. Italy was a very keen buyer, as might have been expected of a land which had had a short harvest, and was, as we have found out since, intent on building up a reserve of wheat in view of entering into the war on the side of the Allies. It is not surprising that British merchants, confronted with the high prices engendered by such sharp competition, should have begun to show what the Board of Trade deemed a lack of enterprise. That department had been advised that this country could not be deemed safe in war, unless at least 540,000 qrs. of wheat or wheat in the shape of flour, were imported each week. This led to our Government making purchases abroad, but very quietly, to supplement the inadequate purchases of British merchants. But these State imports could not be kept secret very long, and presently the corn trade was electrified to learn that the Government had been taking a hand at their own game. In the March of 1915 this led to a sort of panic in the grain trade. The authorities promised that no stocks accumulated by them should be sold except on strict business terms, but this did not thoroughly reassure the traders. The logical end to Government trading was deferred for eighteen months. It was not till the autumn of 1916 that Mr. Runciman announced that private trading in wheat could no longer be allowed in the interests of the nation. No doubt that was the right course to take, because it is obvious that at such a crisis the safety of the people demands a continuity of effort and enterprise which in such times cannot be expected of private traders, whom bold enterprise may either make or break. The Wheat Commission took over their work from the autumn of 1916 ; but it is a question, whether they might not have commenced much earlier. The price of wheat had risen by that time to between 68s. and 70s., and for some kinds of wheat to even more

than the higher figure. These apparently exorbitant prices were greatly due to the ever-rising freights, which had climbed since the outbreak of war to dizzy heights, increasing in some instances more than a thousand-fold as compared with pre-war rates. These swollen freights were the means of practically shutting out of the market the bounteous and record surplus of Australia from the 1915 crop, as the influence of these heavy rates was specially felt on the far voyages. The up-river freights in the Plate, as high as 52s. 6d. per ton in December 1914, gradually rose to over £9 at one juncture in 1916. It has been suggested that the Board of Trade should have controlled these freights, but this question, complicated by neutral shipping, not under British control, was admittedly of a very thorny nature. After the State, using the Wheat Commission as its servants, assumed the entire control of the oversea wheat supply of the United Kingdom, prices rose to but a moderate extent, that is relatively to the advance in the world's price of wheat. This brief account of wheat prices in this land under the pressure of war conditions should, in our opinion, make it clear that a tendency under such conditions is for such staple articles of food as wheat, or flour, to advance out of all proportion to the actual balance of supply and demand. The record of the price of wheat, flour and bread during the Crimean war makes this very evident. The same experience has been repeated during the great war that began on August 4th, 1914. There was neither any shortage, nor any prospective shortage up to the autumn of 1916, but still wheat kept rising persistently. It is true that the constant demands of the Admiralty on our merchant fleet by ever diminishing the tonnage available for the carriage of breadstuffs gave the shipowner an opportunity of which he was not slow to avail himself. The very fact that the authorities could only commandeer British shipping, gave the neutral all the more scope for seeking and making fancy freights, which were duly reflected in the price of wheat and bread. The system of State control instituted by Mr. Runciman at the Board of Trade in the fall of 1916, and developed by his successor in office, has this to its credit, that when after the declaration of war on Germany by the United States, the option markets of that country and of Canada were in a high state of fever, with prices constantly rising, the Wheat Commission pursued the even tenor of its way, selling No. 1 Northern Manitoba at 83s. c.i.f. when the figure might have been expected to be somewhere about 120s. c.i.f. taking into consideration the quotations of the

Chicago and Winnipeg markets. It has been said that the Commission frequently sold at a loss. That may be, but nevertheless the fact that under such abnormal conditions it managed to maintain a relatively moderate price for wheat is a justification for its existence.

WAR TIME BREAD PRICES.

In August, 1914, when the nature of the present conflict was hardly realised, there was a strong press campaign that had for its purpose the maintenance of business as usual. Bakers very readily subscribed to the idea; those with stocks of flour refrained from raising bread prices for about three months, as long as those stocks lasted, and those without stocks had to conform. The proclamation of a *moratorium*, and the refusal of millers to supply flour, except for cash, made the position of the baker very difficult. The difficulty was made an impossibility by the action of *some* of the large milling companies in refusing to supply flour on contracts which had been negotiated before the war was imminent, as they were enabled to do under the terms of the general Finance Act. The gradual increase in flour prices ultimately forced the bakers out of their patriotic and self-denying resolution, and bread prices began to rise, keeping in close parity with increases in price of flour. Almost at the beginning of the war, the Government realised the possibility of a shortage of wheat, and instituted a careful enquiry as to requirements and stocks: at the same time making plans for the substitution of a proportion of potatoes, and of cereals other than wheat, in the manufacture of bread. Part of this enquiry consisted of experiments, the practical part of which was undertaken on behalf of the Government departments concerned, the Local Government Board and the Board of Agriculture, by the staff of the National Bakery School, London. The principle followed was to ascertain to what extent the flour yield from available wheat could be stretched, so as to make a loaf of the highest nutrition, and at the same time, quite palatable. The gist of the opinions arrived at, was that, in case of necessity, a very fine wholemeal flour, consisting of as much as ninety-five per cent. of the weight of wheat used in its manufacture produced a nutritious and very palatable loaf. In the event of wheat being extremely scarce, but cereals such as maize, rice, barley or oats available the saving of grain effected by such a yield was about 23 per cent. Experiments were made in bread-making to discover how proportions of these grains, ground to fine flour could be used, with wheat flour of grades representing 75, 80 and 85

yields. With the lower wheat flour yield, it was determined that flour up to as much as 20 per cent. of the other cereals mentioned could be used with little bad effect on the loaf, beyond an alteration of flavour, a slight reduction in volume, and a shortening of the crumb. These effects, accounted defects, by the bakers as well as by the consumers, were more pronounced when wheat flour of the longer yield was the basis of the mixture. To maintain the ideal of a nutritious and palatable loaf with the long yield flours,it was found that they could only carry smaller quantities of flour from other grains. Many trials were made with potatoes as addition. There was little difficulty in using up to 15 per cent. along with flours of yield up to 75 per cent., but if more potato than this was used the loaves were difficult to bake and close in centre. In any case, unless in an emergency, in which wheat happened to be very scarce, and potatoes very plentiful, there is no real economy in using them in bread. They can be prepared more economically and more palatably in the ordinary way as a vegetable. Thus, 100 lbs. of potatoes is the equivalent of only a little more than 25 lbs. of flour, and in ordinary circumstances they are always troublesome to prepare for bread-making, and unless great care is taken, their use may be a source of danger to the baker. In the course of the experiments referred to above, all sorts of possible substitutes for wheat flour were carefully examined. Thus, flour from haricot beans, horse beans, peas, lentils, arrowroot, &c., were all tried as mixtures in varying proportions with wheat flour for bread-making The loaves were carefully examined by experts and independent witnesses. The results of the tests were recorded for reference. At this period suggestions of all kinds poured into the offices of the departments concerned with the investigations, mostly from people acquainted with only household bread-making. In each case the suggestions were carefully examined, but nothing very helpful for conserving food supplies resulted. Methods of berad-making were proposed identical with those suggested as discoveries at the end of the eighteenth century, and those who brought them to the notice of the Government did so still on the strength of their novelty, and, of course, efficacy. These matters are put on record here because they are unknown to the general public now, and at some future date the historian may hazard the suggestion that the question of food supply was neglected in the early stages of this war, and an effort only made to discover means of conservation when actual scarcity appeared.

About the middle of 1916, the Government promised the appointment of a " Food Controller," whose function was ostensibly to increase, if possible, and to conserve food supplies : to adjust local supplies to local needs : and, above all, to prevent speculations which would have the effect of raising prices. There was some trouble in securing the services of one willing to undertake an office so difficult, but toward the end of 1916, Lord Devonport essayed the task. He was accredited a " strong man " because of his chairmanship of the Port of London Authority, and having from youth been concerned in the provision and grocery trades, his knowledge was considered as being a special qualification. It was necessary that he should be entrusted with very wide powers. His instructions to traders and the public required no statutory sanction, beyond that contained in the Defence of the Realm Act, so that the "Statutory Rules and Orders " which he issued, had all the force of law, to the extent even of overcoming existing statutes. These orders appeared in quick succession, but had very frequently, in some of their provisions, to be amended, or disregarded. The first precise order was issued on January 11th, 1917, and was specified to be enforced after January 29th. After investigations, it was assumed that the specified percentage of flour from different sorts of wheat, would roughly be of something like common grade. A proviso was, however, made that if any milling process produced flour of less than the prescribed percentage from a certain wheat, the miller might or must add flour from rice, barley, maize or oats, to make up to the percentage.

On February 24th, the yield was stretched so that about 5 per cent. more flour had to be extracted. The following were the percentages specified at the two dates :—

Description of Wheat.	Jan. 11. Percentage.	Feb. 24. Percentage.
Choice Bombay	78	83
Australian	78	83
Blue Stem	76½	81½
Walla Walla (White and Red)	75½	80½
Chilian	75	80
New Zealand	76	81
English	76	81
Scotch	75	81

Description of heat.	Jan 11. Percentage.	Feb. 24 Percentage.
Irish	76	80
No. 2 Club Calcutta	75	80
Choice Red Kurrachee	75	80
Soft Red Kurrachee	75	78
Rosafe 62 lbs.	73	78
Baril 61½ lbs.	73	78
Barletta Russo 61½ lbs.	73	78
No. 1 Hard Manitoba	76	81
No. 1 Northern Manitoba	75	80
No. 2 do.	73	78
No. 3 do.	71	76
No. 4 do. Commercial grade	70	75
No. 5 do. do.	67	72
No. 6 do. do.	62	67
No. 4 do. Special Commercial Grade	65	70
No. 5 do. do.	58	63
No. 6 do. do.	48	53
No. 1 Hard and Montana Winter (1916)	77	82
No. 2 Hard Winter (Chicago or Atlantic) Grading (1916)	76	81
No. 2 Hard Winter (Gulf Inspection) (1916)	75	80
No. 2 Red Winter (Western) (1916)	76	81
No. 2 do. (Seaboard Inspection) (1916)	75	80
Steamer Grade Winters (1916)	74	79
Red Winters. All other grades (1916)	76	81
Canadian Winters, Red or White	75	80
No. 2 Chicago Spring (1915)	72	77
Durum	–	77
Japanese	–	79
Feed Wheat, Manitoba, 1916	–	43

On February 26th, an order was issued fixing shape of the loaf to " a one piece oven bottom loaf, or a tin " and prohibiting the sale of bread with currants, sultanas, milk, or sugar. Bakers were forbidden to exchange any bread. They must only sell in loaves of one pound or an even number of pounds : rolls could only be sold weighing two ounces. Loaves must not be sold until they were 12 hours old from time of baking but they must be full weight at any time within 30 hours. This order came into force on March 12th.

On April 4th, an amended order regarding flour manufacture was issued. This stipulated that millers must mix no less than 10 per cent. and not more than 25 per cent of the flour of rice, barley, maize, rye, or oats with wheat flour which might be of 81 per cent extraction, or according to table already given. Without public orders millers were afterwards given authority to mix very much larger proportions of grain other than wheat. The net result of these orders, and the extreme licence they allowed to millers, added to the impossibility of providing any check, was that flour was extremely variable in quality, in many cases so bad that bakers found it impossible to make bread that would please either themselves or their customers. The experiments already referred to were not used to guide the authorities, but millers really experimented on a commercial scale, and to the discomfiture of the baker and the public. Protests were made on every hand. The complaint of the baker was that he never got two loads of flour alike, that he was given no information as to the nature and proportion of other flour than that from wheat used: that the flour would not make eatable bread: that it quickly became mouldy or developed the disease known as rope, which made it unfit even for pig feed. While an active and expensive propaganda was undertaken in the country by lecturers and by posters, etc., preaching economy in the use of bread, and while prosecutions were instituted against bakers who sold waste bread for pig-feed or against people who threw a few crumbs to birds, many thousand tons of bread had to be destroyed because it would not keep, or because disease had appeared. The regulations were in many cases impossible to follow, and the extremest confusion resulted. That order, fixing precisely the weight of loaves had the immediate effect of increasing the price of bread, for the reason already explained, that loaves lose different proportions of water, and therefore, of weight, according to their position in the oven, so that, if every loaf must be not less than a certain weight, the baker had to allow and charge for an excessive margin of dough, which would ensure that the majority of loaves were *above* the specified weight. In addition to increases in price of flour, bakers had to meet great increases in labour charges, for fuel, yeast, salt, and indeed, everything he uses in manufacture and distribution. These all helped to make increases in bread prices imperative. The following table shows, roughly, the changes recorded in bread prices since August, 1914, in London :—

	per 4 lb.		per 4 lb.
August 1914	5½d.	Jan. 1916	8½d.-9d
Dec., 1914	6½d.	July, 1916	8d.-8½d
Jan., 1915	7d.-7½d.	Sept., 1916	9d.-9½d
Feb., 1915	8d.	Dec., 1916	10d.
April 1915	8½d.	Jan., 1917	10½d.
May, 1915	9d.	Feb., 1917	11d.
June, 1915	8d.	Mar., 1917	1s.
Nov., 1915	8½d.	Aug., 1917	1s.

These prices are those of leading family bakers, but plenty of good bread was obtainable at 11d. per four pounds. Some co-operative societies and bakers in direct competition with them, sold at 10½d., while in poor neighbourhoods it was, in cases, retailed at 10d. per four pounds. The price charged by family bakers' included costs of delivery, which were very high.

About the end of May Lord Devonport resigned his position as Food Controller, and about the middle of June, Lord Rhondda was appointed. His status as a successful business man had been secured principally in connection with the development of the great Welsh coalfields, but also in the directorate of many public and private industrial undertakings. With his advent to office there was a cessation of the lecture campaigns and economy exhibitions which had been so much a feature of the Control department before. The new Controller was in no hurry to "do something" startling, but quietly set on foot enquiries as to what could be safely done and devising machinery to carry out the plans settled on. So far as bread was concerned, an announcement was made early in the new reign that its price was to be reduced to 9d. per 4 lb. loaf at the bread shop. As the selling price over the counter was on the average 11d., the charge meant a reduction of 2d. on each 4 lb. Bakers were allowed to charge extra for delivery or credit. The estimated consumption of flour for breadmaking for the whole United Kingdom was about 32,000,000 sacks. As a halfpenny reduction on a four-pound loaf is roughly equivalent to 4s. on a sack of flour, a reduction of 2d. would necessitate a drop in the price of flour to 16s. per sack. On the total consumption this was £25,000,000 per annum, or nearly half a million pounds per week. Part of this the Food Controller proposed to secure by reducing the amount millers had obtained for milling the wheat, and

the amount bakers had secured for making bread, the remainder to be made good from the National Exchequer. The principal involved was that known in other days as the "dole" system, and was on that account strongly criticized by the official opposition, who contended that if it was necessary to give some relief to the poorer sections of the community, it would be a safer method to remit duties on such things as tea, tobacco, &c., of which the poor were large purchasers. On behalf of the Government it was admitted that a bread subsidy was the method proposed to allay discontent with high prices which had become very pronounced. At the time of writing the scheme had not yet been brought into operation, but in many quarters it was considered a highly dangerous departure from ordinary practice.

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